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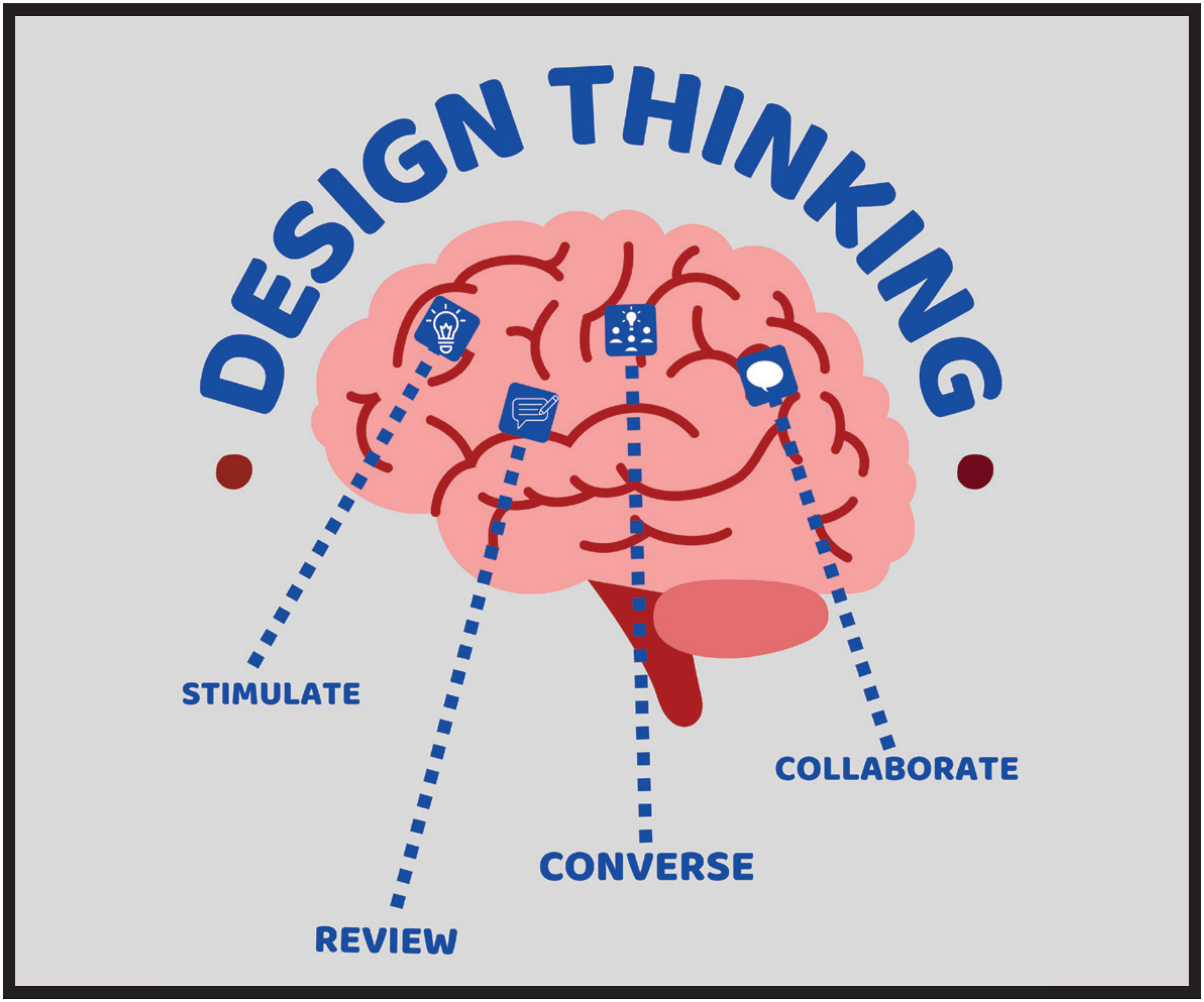
Journal of the Society for Technical Communication



Technical COMMUNICATION

Journal of the Society for Technical Communication

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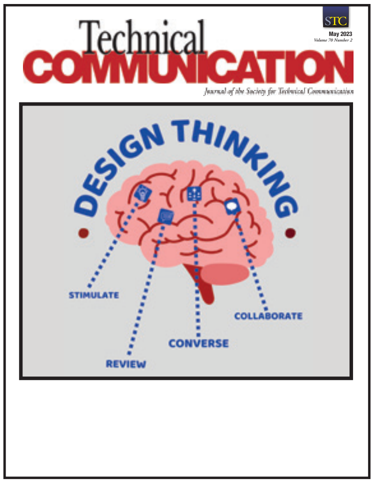
ARTICLES



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INSTRUCTIONS FOR AUTHORS

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Technical Communication is a peer-reviewed, quarterly journal published by the Society for Technical Communication (STC). It is aimed at an audience of technical communication practitioners and academics. The journal's goal is to contribute to the body of knowledge of the field of technical communication from a multidisciplinary perspective, with special emphasis on the combination of academic rigor and practical relevance.

Technical Communication publishes articles in five categories:

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Miriam F. Williams, Editor

An Interview with Dr. Natasha N. Jones

To introduce this issue of *Technical Communication*, I am honored to interview a brilliant scholar, Dr. Natasha N. Jones. Dr. Jones is a technical communication scholar and co-author of the book *Technical Communication after the Social Justice Turn: Building Coalitions for Action*. Her research interests include social justice, narrative, and technical communication pedagogy. She has received national recognition for her work, being awarded the CCCC Best Article in Technical and Scientific Communication (2020, 2018, and 2014) and the Nell Ann Pickett Award (2017). She currently serves as the President for the Association of Teachers of Technical Writing (ATTW).

Miriam: Hi Natasha. First, I'd like to thank you for your many contributions to the field of technical communication and your work as an editorial advisory board member of *Technical Communication*. Most readers of the journal are familiar with your work, but they may not know how your career in technical communication started. Tell us a bit about yourself. How did your career in tech comm begin?

Natasha: Thank you, Miriam, for giving me the opportunity to speak with you! I'd say that I kind of fell backwards into technical communication. In undergrad, I majored in Print Journalism and minored in English. I always thought that I'd be a magazine editor and had started on that path after I received my Bachelor's degree. However, life has a way of always surprising us. After the birth of my daughter, and as a single mom, I found myself working a corporate job when my sister told me about Auburn University's Masters of Technical and Professional Communication program (MTPC). I had no idea what technical communication was, so I did some quick research and discovered I could do editing and content creation. It sounded like I could draw on the skills I learned in print journalism. I applied and was accepted!

Graduate school was a challenge! New city, single mom, and a whole new way of engaging with texts. Luckily, Dr. Michelle Sidler helped spark my interest in thinking about technical communication beyond editing (which is what I'd always thought I wanted to do). One year, she offered a course in Biotechnology. At first glance, I couldn't understand why a course in Biotechnology would be relevant to technical communication, but once I started in the course, my entire perception of the field changed. I began to learn about how we understand, communicate about, and engage with scientific advancements like DNA forensics and nanotechnology. It was in this course that I began to understand the role that technical communication can play in justice work (specifically, how the ways that we understand, communicate about, and employ the use of DNA forensics could help exonerate wrongfully convicted individuals). This was a game-changer for me and I realized I might be interested in pursuing a doctoral degree. My original plan had been to earn my MA and go into industry. To help facilitate that, I'd even taken on a job as a technical editor for a mechanical engineering journal. After Michelle Sidler's class and with her support, however, I applied to PhD programs and was accepted into the University of Washington's Human Centered Design & Engineering Program (then it was the Technical Communication Department). I was off to Seattle and that is how my career in technical communication began!

Miriam: I didn't know that! Speaking of graduate school, in my work as a professor at Texas State, I've had the pleasure of having you visit several of my classes and I include your award-winning research on social justice, including your groundbreaking book with Dr. Rebecca Walton and Dr. Kristen Moore, *Technical Communication After the Social Justice Turn*, in my

An Interview with Dr. Natasha N. Jones

students' assigned readings. My former students who have studied your research have gone on to work as Lead Technical Writers and UX designers in companies in Austin and San Antonio, TX including Tesla, VISA, IBM, and Google. I know that instructors around the country who have had the same experience. Still, I know some technical communication teachers are still skeptical about teaching social justice in their undergraduate and graduate curriculum. Why do you think some view social justice as tangential to teaching research methods, UX design, content strategy, editing, proposal writing, and other coursework, but not ethics?

Natasha: Honestly, I think that some folks believe that social justice is too "political." I've been told directly and indirectly that "politics" do not have a place in technical communication and should not be engaged in our research, pedagogy, and programs. For me, and as I've argued before, technical communication is not neutral, objective, or apolitical. The ways that we engage in our discipline and do our work, whether we acknowledge it or not, is laden with political and ethical implications. Further, the refusal to acknowledge the political and ethical implications of our work and pedagogy in itself is, to me, a political stance. It's a privileged stance that chooses an illusion (of neutrality, of peace, of collegiality, of "niceness") over engagement. Our research has political implications and our classrooms, as much as we say they aren't, are also political spaces. bell hooks, Black feminist scholar and icon, in her book *Teaching to Transgress: Education as the Practice of Freedom*, reminds us that "the classroom remains the most radical space of possibility in the academy" (hooks, p. 12) and she links her classroom practice to political activism. Similarly, I see the work that I do—engaged pedagogy, justice-centered, advocacy work—as necessarily political. When I step into the classroom as a Black woman, single mother from Southeast Georgia, this is a political statement. I choose not to ignore that and I strive for all of my work to make clear, not only who I am, but who I hold myself accountable to and how I choose to resist and subvert certain neoliberal trappings of the academy. For me, being silent about how I perceive the work that I set out to do will not protect me from any oppressive practices, so why not make evident the role that justice-oriented work can play in redressing injustice? I always remind myself of Audre Lorde's words that, and I'm paraphrasing, silence will not save us.

Miriam: That advice is useful for the academy and industry. So, what is your hope for the future of technical communication for teachers, students, researchers, and practitioners?

Natasha: Whoa, that's a big question. For me, I think I'm already seeing hopes that I had for technical communication as a field come to fruition. First, my hope is for a more inclusive field and I think we are starting to see that in the ways that folks take up technical communication as an interdisciplinary, advocacy-oriented discipline that, at its core, concerns itself with people. I think folks are beginning to understand that, as technical communicators, you must be concerned about and address things like race, gender, disability, sexuality, access, inclusion, ethnicity--I could go on, but all the things that impact human experiences. I see more and more folks speaking up and speaking out about the varied ways that our positionalities and privileges affect how we do our work and who we are accountable to in our work. In essence, I suppose my hope is for honest acknowledgements of how who we are shapes our experiences in personal, political, and professional ways and the realization of the myriad ways that technical communicators can engage in and commit to justice work.

Many thanks to Dr. Natasha N. Jones for taking the time to share her experiences and advice with *Technical Communication*!

IN THIS ISSUE

As important as the information shared by Dr. Jones, this issue of *Technical Communication* is filled with exciting research that explores technical communication strategies that served as the launch pad for Oxycontin, the convergence of technical communication and marketing communication in DIY videos, the content marketing strategy for a start-up company that sells DIY solar products, a

Miriam F. Williams, Editor

comparison of corporate websites in China and the U.S., and a comparison of students' perceptions of EFL language learning in WeChat and Moodle in a Taiwanese collaborative learning context.

In the first article, "What They were Thinking: Communal Rationality, Strategic Action Fields, and the Launch Plan for Oxycontin," Michael J. Madson uses strategic action field (SAF) as a heuristic to investigate the 1990's launch plan for Oxycontin in the United States. In doing so, the author asks: What is going on? What is at stake? What interpretive frames are constructed? and What are the rules of the game? The author writes, "The communal rationality expressed in the launch plan involves a complex tangle of cultural knowledge, including state and national laws, guidelines, classes of analgesics, and industry practices. The writers effectively translate this knowledge into opportunities, positioning statements, strategies, and tactics. In some ways, the launch plan is an exemplary piece of technical and professional communication, but its treatment of ethics and risk is highly problematic—arguably making it an example of communication failure as well." In this article, the author acknowledges previous research in technical communication, which explores this public health crisis and concludes, "[e]fforts to address the opioid crisis must remain a high priority however long it lasts, being 'one of the largest and most complex public health tragedies that [the United States] has ever faced…' The launch plan for OxyContin provides a valuable point of entrée."

In the case study, "Convergent Practices in Social Media Videos: Examining Genre Conventions in Business-to-Consumer Content," Brandon C. Strubberg and Chase Mitchell analyze tech comm, marcomm, and convergent social media videos "to delineate genre conventions across genres." In their examination of DIY videos, they find that convergent characters are "distinct from tech comm and marcomm." The authors write, "In this article, we present a case study of select videos from the Facebook, Instagram, and YouTube accounts of Home Depot and Lowe's. We first examine videos that align with genre practices for both tech comm and marcomm video content creation. We then use those examples of instructional and marketing videos to compare with apparent convergent content—as defined by Samuels and Aschwanden (2017) and Urbina (2017)—to discuss how the traditional genre conventions are used in convergent content. Our goal is to illustrate the differences between traditional genres and convergence and aid technical communicators in understanding the genre and how to think strategically about convergent content."

The third article is another case study that examines technical communication surrounding DIY content. In "Strategy of Technical Content Marketing in an Entrepreneurial Tech Company: Using the Funnel-Bucket Model to Guide the Message and Media," Scott Mogull writes, "In this article, the content strategy for technical content marketing (TCM) is examined for a start-up tech company, Terra Solar, commercializing a "do-it-yourself" (DIY) home solar power kit that makes clean energy more affordable and accessible to a wider range of consumers. Notably, this article illustrates the role of technical communication in technical content marketing using the funnel-bucket model, a framework for implementing content strategy for new products, to inform the communication goals of an entrepreneurial technology company and provides a framework for implementing content marketing publication strategy for new technical products…This article situates strategic marketing plans with the theory of content strategy and includes a review of the latest research in content marketing to provide readers with a research-based guide for planning the commercialization strategy for technology products."

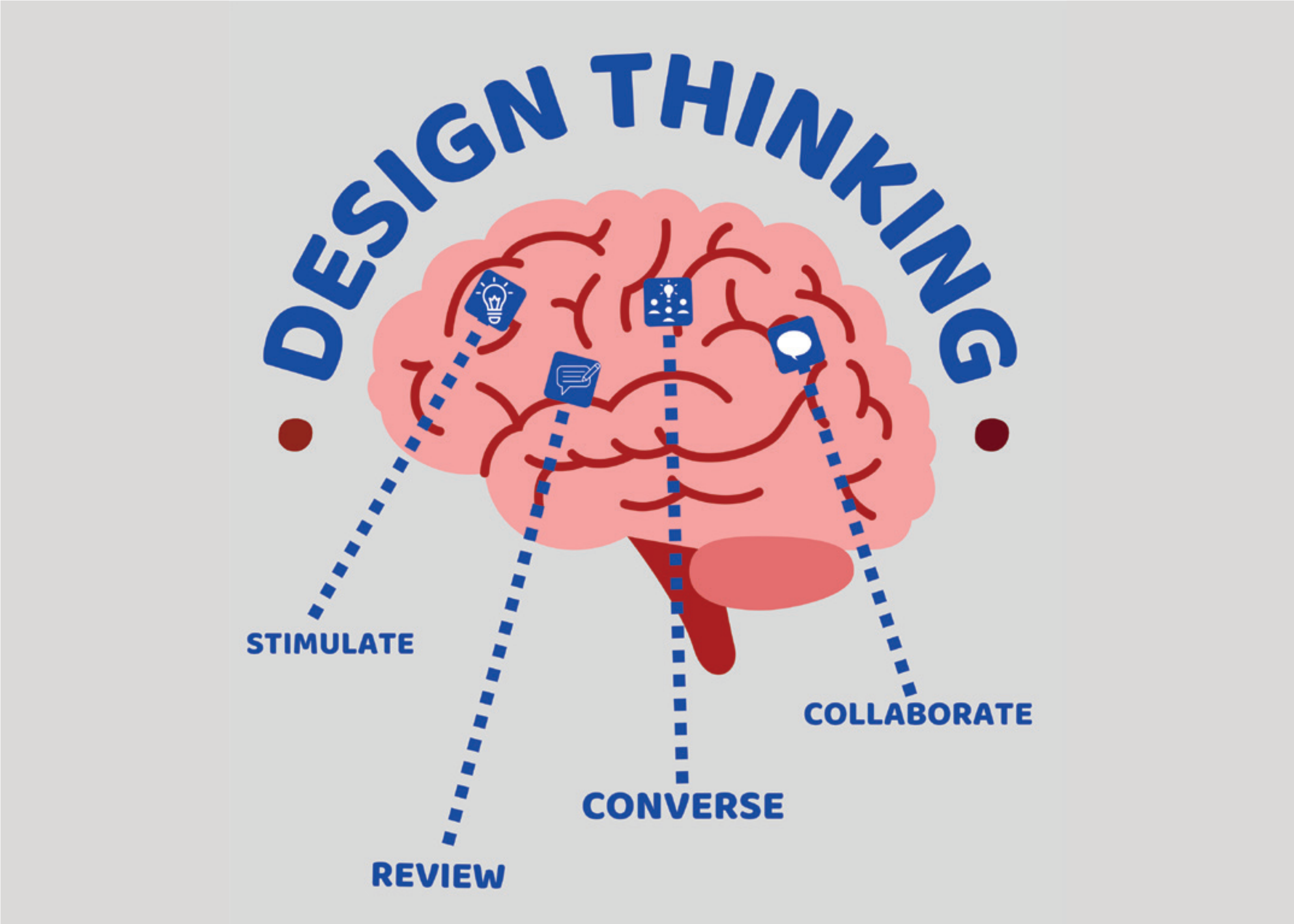
In the fourth article, "Comparing the Multimodality of Chinese and U.S. Corporate Homepages: The Importance of Understanding Local Cultures," Wenjuan Xu and Xingsong Shi develop a framework for annotating multimodal elements on corporate websites and use this framework to compare 35 Chinese and 35 U.S. corporate websites. The authors write, "First, in the study, we construct an annotation framework for systematically analyzing the composition and arrangement of

An Interview with Dr. Natasha N. Jones

multimodal resources on corporate homepages. The framework has been tested and verified in this research and can serve as the annotation instrument for other varieties of digital documents, such as social media platforms and mobile apps, to name a few. Second, departing from the traditional qualitative research approach, we adopt a quantitatively oriented method and provide a more nuanced and objective picture of the multimodal nature of corporate homepages. Third, rather than limiting the analyses in a single cultural context, we conduct a comparative study on Chinese and U.S. corporate homepages. The findings, based on a genre-sensitive and empirically grounded approach, verify the influence of culture on business online communication, and further attract our attention to cross-cultural variations in the verbal-visual interfaces on online communicative platforms."

We conclude this issue with "Incorporating Computer-Mediated Communication in EFL Reading," by Hui-Fang Shang. In this article, the author conducts a comparison of students' perceptions of English as a Foreign Language (EFL) learning using WeChat and Moodle in a senior-level undergraduate English course at private university in Southern Taiwan. The author writes, "The study's findings will provide insight about what happens in online peer CMC environments for EFL teachers and curriculum designers. It also recommends that instructors consider balancing the use of different CMC modes, not only to increase students' motivation in collaborative peer learning environment but also to satisfy individual preferences and needs by understanding the benefits and drawbacks of using online CMC modes.

On the Cover



ARTISTS' NOTES

We focus on the four pillars of design thinking strategy in a group setting. On Canva, we created a brain graphic and used small icons to represent the four pillars along with labeling the pillars in the brain. The whole brain is meant to represent design thinking as a whole. The small, labeled areas are meant to represent the four pillars for the use of design thinking in a group setting. We decided to use a brain because a brain is similar to an organization. There are many working parts that come together to create one large system, and there are many elements of a brain that come together to support a human being. In our design thinking system the brain—stimulate, review, converse, and collaborate—all the elements come together to build a successful design thinking system of an organization.

ABOUT THE ARTISTS

Peter Cauchy is a senior at the University of Delaware majoring in electrical engineering, and Jianna Tsaganos is a senior at the University of Delaware majoring in finance and marketing. They completed this illustration as students in Dr. Jessica Edwards' technical communication course at the University of Delaware.

What They Were Thinking: Communal Rationality, Strategic Action Fields, and the Launch Plan for OxyContin

doi.org/10.55177/tc749689

By Michael J. Madson

ABSTRACT

Purpose: Few studies in our field have investigated corporate communications at the origins of the United States opioid crisis, which arguably began around the mid-1990s. Such analyses can illuminate executives and managers' collective thinking at the time (that is, "communal rationality"), nuance our public narratives, and recommend ways that technical communicators can engage further with this public health tragedy. Thus, this article surfaces the communal rationality expressed in the launch plan for OxyContin, which I obtained through a Freedom of Information Act request. This is perhaps the first close reading of a pharmaceutical launch plan in our scholarly literature.

Method: Following precedent in other research, I applied a three-point heuristic based on the concept of strategic action fields: what is going on and what is at stake, what interpretive frames are constructed, and what the rules of the game are.

Results: The communal rationality expressed in the launch plan involves a complex tangle of cultural knowledge, including state and national laws, guidelines, classes of analgesics, and industry practices. The writers effectively translate this knowledge into opportunities, positioning statements, strategies, and tactics.

Conclusion: In some ways, the launch plan is an exemplary piece of technical and professional communication, but its treatment of ethics and risk is highly problematic—arguably making it an example of communication failure as well. Future research should delve deeper into the opioid crisis, exploring additional promotions, genres, drugs, and methodologies.

Keywords: Opioid Crisis, OxyContin, Communal Rationality, Strategic Action Field, Launch Plan

Practitioner's Takeaways:

- In launch plans for drugs, especially controlled drugs, technical communicators must carefully weigh how they represent the market, develop product profiles, and target potential buyers.
- Marketing should not be disguised, and where needed, technical communicators should seek professional development in health literacy, bioethics, and marketing ethics.
- Technical communicators must elevate their professional ethics above the "concepts, values, traditions, and style" of the biomedical discourses that they produce.
- Beyond that, we must work to reimagine the boundaries of these discourses and advocate for more culturally responsive, inclusive approaches to communication—pre-launch, peri-launch, and post-launch.

It was a mild autumn day in Norwalk, Connecticut, when a project manager named Michael submitted a lengthy document to his colleagues. The document, timestamped with the year 1995, was in some respects unremarkable. Like others of its genre, it contained a hierarchical organization of text, passive voice, careful hedging, a few typos in subject/verb agreement, and tables of numerical data. The writers had, at one point, mistaken a 4 for a 9 in a column labeled "annual dollar sales," but they had still correctly calculated the rate of growth. In other respects, the document was electric, a source of heightened power and risk. Michael's team did not realize it then, but the document would contribute to windfall profits, tighter regulation of the industry, litigation against company executives, and a staggering degree of human misery.

This was the launch plan for OxyContin, a long-acting tablet containing oxycodone (a Class II opioid). Manufactured by Purdue Pharma, OxyContin would soon become one the most notorious painkillers implicated in the United States opioid crisis.

The opioid crisis has been called "one of the largest and most complex public health tragedies that [the United States] has ever faced" (Gottlieb, 2019), and it has attracted wide coverage in journalism and scholarship. In the field of technical and professional communication (TPC), scholars have focused on community outreach efforts (Batova, 2019; Bivens, 2018; Dreher, 2018), data visualization and racial disparities (Welhausen, 2022, 2023), and multiple ontologies embodied by those suffering from chronic pain (Graham & Herndl, 2013; Graham, 2015), among other topics. This work has been valuable. To date, however, few TPC studies have examined corporate communications at the origins of the crisis, including the launch plan for OxyContin. The launch plan is of particular importance because it depicts how executives and managers collectively perceived market conditions in the United States at the time. In addition, the launch plan is a persuasive document, issuing recommendations that would shape later decisions by the company. Thus, the launch plan is a prime example of kairotic communication, and it suggests that the development and promotion of OxyContin was motivated by more than runaway greed. It was also a matter of "communal rationality," the seemingly "contextless logic" that undergirds biomedical discourses (Miller, 1979, p. 617; DeTora, 2021, p. 222).

This article analyzes the communal rationality expressed in the launch plan for OxyContin, taking the concept of "strategic action field" (SAF) as a heuristic. First, I locate the analysis in relevant literature on drugs, product launches, and communal rationality, highlighting research gaps. Second, I describe the concept of SAF, relying on the influential work of sociologists Neil Fligstein and Doug McAdam (2011, 2012). Third, I lay out the research questions and apply the heuristic, which has three points: what is going on in the SAF and what is at stake, what interpretive frames are constructed, and what the rules of the game are, especially in terms of strategies and tactics. Fourth and finally, I discuss the findings, drawing implications for TPC professionals, both practitioners and scholars.

DRUGS, PRODUCT LAUNCHES, AND COMMUNAL RATIONALITY

TPC scholarship has long engaged with the social complexities surrounding drugs, with early studies in our journals dating to the 1970s (Aziz, 1974; Montague, 1971). Since then, much scholarship in this area has analyzed genre, focusing on clinical investigator brochures (Pakes, 1993), drug information leaflets (Maat & Klaasen, 1994; Maat & Lentz, 2011), clinical trial protocols (Bell et al., 2000), clinical study reports (Cuppan & Bernhardt, 2012; DeTora, 2017), patient safety narratives (DeTora & Klein, 2020), presentations at federal committee meetings (Graham et al., 2015; Teston et al., 2014), and product labels (Agboka, 2014, 2021; Ding, 2004; Kessler & Graham, 2018). Some TPC scholarship has focused on drug advertising (Davis, 1999) and product launches in other industries (Boyd et al., 1997; Spinuzzi, 2010). Few if any TPC studies have investigated the launch plans for new drugs.

When accessible, launch plans are significant documents to study because of their industry uses and historical value. In short, launch plans position new drugs on the market: they pinpoint ways that the drugs can stand out from competitors, identify target audiences, and propose future actions. As a result, launch plans, if effective, can enable pharmaceutical companies to recoup the money spent on research and development, which, across the industry, totaled $83 billion in 2019 (Congressional Budget Office, 2021). Since most new drugs do not pass clinical trials, pharmaceutical companies will expend considerable

resources, coordinated through launch plans, to ensure that drugs approved by federal agencies are a financial success (Natanek et al., 2017). Relatedly, launch plans are historical documents, providing a cross-section of market conditions and executive thinking at a particular time. Because they contain confidential information, launch plans are not usually released to the public in the absence of a judicial order. That has been the case with Purdue Pharma, the maker of OxyContin. But now that the launch plan for OxyContin is publicly accessible, allowing for deeper investigations into the origins of the United States opioid crisis and its enduring impacts (see Alpert et al., 2021), questions arise over how to proceed.

Helpfully, TPC scholarship on drugs has resurfaced the notion of communal rationality, which can provide a path forward. The term in TPC can be traced to 1979, when Carolyn Miller advocated for a "flagrantly rhetorical approach" to the teaching of TPC. Under such an approach, instructors acknowledge that the act of writing involves participation in a community, including "concepts, values, traditions, and style which permit identification with that community and determine the success or failure of communication" (Miller, 1979, p. 617). It follows that instructors should teach "a broader understanding of why and how to adjust or violate the rules, of the social implications of the roles a writer casts for himself or herself and for the reader, and of the ethical repercussions of one's words" (Miller, 1979, p. 617). We can thereby "ground our teaching and our discipline in a communal rationality rather than in contextless logic" (Miller, 1979, p. 617).

The term was recently picked up by Lisa DeTora (2021) in a book chapter on biomedical discourses and regulatory documentation. DeTora (2021) argued that we should understand biomedical discourses, with their positivistic overtones, as a "series of different intellectual cultures, each of which constitutes itself rationally, as described in its accepted guidelines" (p. 222). To outsiders, biomedical discourses may indeed seem like contextless logic and, consequently, pose challenges for reading. These challenges range from structured formats (e.g., IMRaD) that leave readers to piece together the overall meaning for themselves, to semantic slippage: that is, the same term can mean different things, even within the same sentence. The communal rationality of biomedical discourses, DeTora (2021) added, can be illuminated through studies of regulatory documents, such as statements from the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use, ethical codes, regulations, and requirements from professional societies. These studies can concretize the "concepts, values, traditions, and style" that the various stakeholders expect (see Miller, 1979, p. 617).

DeTora (2021) makes cogent arguments, reflecting her firsthand experience in, and insightful scholarship on, the pharmaceutical industry. Yet, her book chapter is general in focus, and regulatory documents alone will only partly illuminate the communal rationality operating in certain biomedical genres, such as launch plans. Launch plans are produced for company insiders and are not subject to the same regulatory requirements as, say, clinical trial reports, product labels, or even advertisements. Moreover, companies will generally keep their internal guidelines for the "concepts, values, traditions, and style" (Miller, 1979, p. 617) expected in launch plans confidential. Thus, to advance studies of communal rationality, we will need to find additional heuristics. In this article, I consider communal rationality in terms of SAF, which already has precedent in analyses of biomedical discourses. For example, SAF has guided studies of biotechnology in Australia (Gilding & Pickering, 2011), homecare nursing in Norway (Melby et al., 2018), medical communications in Japan (Schrimpf, 2018), psychotropic drugs in Brazil (Sato, 2018), and state responses to the opioid crisis (Smith et al., 2021). Because it is new to TPC scholarship, SAF merits some explanation here.

STRATEGIC ACTION FIELDS

SAF has roots in the groundbreaking work of Pierre Bourdieu, who theorized "fields": socially structured spaces where actors produce, circulate, and contest forms of capital, including goods, services, information, and status (Bourdieu, 1977; Bourdieu & Wacquant, 1992). SAF also has roots in Anthony Giddens' (1979, 1984) structuration theory, institutional theory in political science and sociology, and social movement theory. Acknowledging these influences, Fligstein and McAdam (2012) define SAFs as a meso-level social order, the basic building blocks of collective action (pp. 3, 9-10). Similar concepts in sociological research include sectors, games, networks, policy domains, and markets. Like these concepts, SAFs are embedded and

scalable, and Fligstein and McAdam (2012) suggest a large, corporate office as an illustration. The office may belong to a larger division within the firm, and the firm may compete with other companies that participate in an international division of labor—all of which can be understood as SAFs, creating systems of proximate and distal fields (pp. 9, 18-19).

What distinguishes an SAF, then? According to Fligstein and McAdam (2012), SAFs rest on several underlying understandings that go beyond the logics of similar concepts: Actors will share a general understanding of what is going on in the SAF and what is at stake, construct and apply interpretive frames to understand each other's actions, and agree on the rules of the game.

What Is Going On And What Is At Stake

The boundaries of an SAF are never static or stable, and low-level competition is the norm. Yet, when an SAF is settled (rather than in upheaval), the actors will eventually agree on what is happening in the SAF and what is at stake. Actors may not agree that the current conditions in the SAF are legitimate, "only that the overall account of the terrain of the field is shared by most actors" (Fligstein & McAdam, 2012, pp. 11, 88, 170). Since membership in an SAF is subjective, actors can be understood as "those groups who *routinely* take each other into account in their actions," qualitatively or quantitatively (pp. 167-168).

Interpretive Frames

Interpretive frames are "hypotheses about the sorts of events that may be encountered in a given scenario," such as expectations, projections, or models for a course of action (Cornelissen & Werner, 2014, p. 188; cf. Lakoff, 2014). In harmony with Bourdieu (1977), interpretive frames may vary with the actors' positions and power within an SAF. Those in power, or incumbents, will usually seek to normalize and maintain the status quo whereas challengers will tend to adopt oppositional perspectives. In either case, skilled actors can apply their interpretive frames in ways that appeal to existing identities and interests, eliciting cooperation from allies and casting enemies in a negative light (Fligstein & McAdam, 2012, p. 11). Practically, interpretive frames often manifest as opportunities and threats that the actors construct (Fligstein & McAdam, 2011).

Interpretive frames can be affected by governance units, which oversee compliance and facilitate smooth operations. Governance units are not "neutral arbiters" when conflict arises, contrary to the rhetorics that may justify their actions (Fligstein & McAdam, 2012, pp. 14, 78). Rather, governance units tend to reinforce dominant perspectives and protect the interests of incumbents. Some governance units are internal to an SAF while others, such as state agencies, are external.

What The "Rules" Are

No matter their position in an SAF, skilled actors know strategies and tactics that are "possible, legitimate, and interpretable" at a given time and in a given role (Fligstein & McAdam, 2012, pp. 11, 88, 170). Fligstein and McAdam (2012) call this cultural knowledge "social skill." That is, "the ability to empathetically understand situations and what others need and want and to figure out how to use this information to get what you want" (p. 178). Amid contention, skilled actors not only construct opportunities and threats. They also engage in organizational appropriation, linking threats and opportunities to resources, such as communications, trainings, and funding (Fligstein & McAdam, 2011, p. 9). Actors may subsequently take up innovative action, violating SAF rules in support, or in defense of, their identities and interests (Fligstein & McAdam, 2011).

Like interpretive frames, some social skill varies with actors' positions and power in the SAF. To defend the status quo, incumbents may employ cooptation, merger, and imitation. Challengers may find niches where an incumbent will not go and wait for a crisis when they can take advantage. They may even attempt to institute a new configuration of power, such as by establishing new rules, forming a political coalition, or advancing "a new set of cultural understandings that reorganizes [actors'] interests and identities" (Fligstein & McAdam, 2012, p. 189). In product launches, actors may deploy targeting strategies (who to sell to?), timing strategies (when to act?), and strategies to communicate the product's innovativeness (what is different or new?) (Guiltinan, 1999, p. 516).

The concept of SAF thus seems well suited for an analysis of the communal rationality expressed in the OxyContin launch plan. The pharmaceutical industry, in the mid-1990s and now, is riven with competition. As companies continually work to out-maneuver each other, they occupy a variety of positions, and they are

mediated by governance units, such as the United States Food and Drug Administration (FDA). Indeed, the concept of SAF assumes that "people are always acting strategically" (Fligstein & McAdam, 2011, p. 7), a useful stance for analysis. Moreover, some writers have argued that Purdue Pharma succeeded in selling not just opioid pills, but the very idea of opioids (see, e.g., Meier, 2018, p. 39), making the company's interpretive frames, along with strategies and tactics, particularly salient.

In this article, I subsequently adopted terminology, relationships, and focal points baked into the concept of SAF, which I took as a three-point heuristic: what is going on in the SAF and what is at stake, what interpretive frames are constructed, and what the rules of the game are, especially in terms of strategies and tactics. Certainly, this is not the only way of parsing the communal rationality in the launch plan, which I received unredacted through a Freedom of Information Act (FOIA) request to the Florida Attorney General. But SAF may provide valuable insights.

Research Questions

Corresponding to the three-point heuristic, this article centers on three research questions.

R1: How does the launch plan describe what is going on and what is at stake in the SAF? Or in other words, how does the launch plan describe the market conditions for OxyContin?

R2: What interpretive frames does the launch plan construct?

R3: Subsequently, what strategies and tactics does the launch plan propose?

The following sections show how I applied the heuristic, analyzing the communal rationality expressed in the OxyContin launch plan (refer to Table 1 for a summary). Unless otherwise indicated, the parenthetical citations indicate where in the launch plan the information appears.

R1: HOW DOES THE LAUNCH PLAN DESCRIBE WHAT IS GOING ON AND WHAT IS AT STAKE IN THE SAF?

The launch plan for OxyContin does not lay out a specific purpose statement. It contains little in the way of an introduction or conclusion to bookend the various sections, which focus on market data and assumptions, the new product profile for OxyContin, and a communication plan. Rather, Michael's team of writers builds their arguments from numerous forms of cultural knowledge that include national and state laws, guidelines, classes of analgesics (painkillers), and industry activity displayed on 18 tables in the appendices.

National And State Laws

The writers mention national and state laws throughout the launch plan. One national law is the Omnibus Budget Reconciliation Act (OBRA), which mandated standards for patient counseling. Under the act, a pharmacist would offer counseling to Medicaid recipients when they filled a prescription (p. 25). Other national laws pertain to specific classes of opioids, which for clarity, I discuss in the next subsection.

The state laws mentioned in the launch plan govern triplicate paperwork requirements (pp. 4, 6, 27, 49). To prescribe opioids, a physician would need to make three copies of the paperwork: the physician would keep one themselves. The pharmacist would keep another copy after filling the prescription, and then send a third copy to a government health agency. The agency would monitor prescription patterns and, as needed, investigate irregularities. In the 1960s, California became the first state to adopt triplicate paperwork requirements, followed by Idaho, Illinois, Indiana, Michigan, New York, and Texas (see Alpert et al., 2022).

Guidelines

The writers cite two sets of guidelines: the analgesic stepladder proposed by the World Health Organization (WHO) (Ventafridda et al., 1985) and, to a lesser extent, the Agency for Health Care Policy and Research (AHCPR) Clinical Practice Guideline for the Management of Cancer Pain (Jacox et al., 1994).

The analgesic stepladder, which the writers reference more than 20 times, was originally developed to guide the treatment of cancer patients. It consists of three steps that account for the severity of pain and the recommended medication.

Step 1, mild pain. Patients should receive medications other than opioids, such as nonsteroidal anti-inflammatory drugs (NSAIDs) or acetaminophen, with or without adjuvants. An adjuvant is a substance added to a drug that increases its strength or efficacy.

Step 2, moderate pain. Patients should receive "weak" opioids such as codeine, hydrocodone, or tramadol, without or without adjuvants, and without or without additional non-opioid painkillers. (Many analgesics contain a combination of opioids and non-opioids, which potentially alleviate a patient's pain through multiple neural pathways.)

Step 3, persistent and severe pain. Patients should receive "strong" opioids such as buprenorphine, fentanyl, methadone, morphine, or oxycodone, with or without adjuvants, and with or without non-opioid painkillers (see also Anekar & Cascella, 2021).

The writers also cite the AHCPR Clinical Practice Guideline for the Management of Cancer Pain (pp. 21, 22, 24). The guideline was developed by a multi-disciplinary panel of clinicians, who conducted extensive reviews of the scientific literature and identified, according to their professional judgment, areas where the literature was inconsistent or incomplete (Jacox et al., 1994). As a result, the guideline reflected the then-current state of knowledge of cancer pain management. Among other things, the guideline emphasized that the undertreatment of cancer pain was widespread, even though effective management was possible in most patients, up to 90% of them. Although it endorsed multimodality—a blend of drug and non-drug approaches to pain management—the guideline expressed generally positive views on opioids (Jacox et al., 1994, chapter 3).

Classes Of Analgesics

The writers refer repeatedly to Class II, Class III, and Class IV analgesics. The class depended largely on the active ingredients, or "chemical types."

Nine chemical types were part of Class II analgesics: morphine sulfate (e.g., MS Contin), oxycodone (e.g., Percocet), fentanyl (e.g., Duragesic), meperidine, hydromorphone, plain codeine, methadone, levorphanol, oxymorphone, and opium alkaloids. These chemical types underwent further categorization when they were combined with a non-opioid painkiller, such as "APAP" (acetaminophen) or "ASA" (acetylsalicylic acid, often branded as Aspirin).

Other combinations fell into Class III and IV. Class III analgesics included combinations with dihydrocodeine, hydrocodone, or codeine. Class IV analgesics contained propoxyphene or pentazocine.

The class divisions were not only a matter of chemistry. There could also be regulatory differences between classes, as the writers explain. Class II analgesics fell under the strictest regulations for marketed drugs. For example, Class II opioids could not be "phoned in to the pharmacy," and in some states, had triplicate paperwork requirements. In contrast, Class III and IV opioids required some recordkeeping, but they could be phoned in (pp. 4, 6).

At points, the writers refer to opioid classes as "categories" or "markets."

Industry Activity

Industry activity, quantified in the appendices, include dollar sales, annual prescriptions, usage by diagnosis or visits, spending on journal advertisements, and pricing. The writers made their calculations based on other pharmaceutical companies that share membership in the SAF, including Forest, Geneva, Janssen, Knoll, Lilly, McNeil, Monarch, Roche, Roxane, Ruby, Sandoz, Sanofi, Upsher-Smith, Whitby, and Wyeth.

Dollar sales

The writers display dollar sales for leading Class II analgesics from the prior five years (1990 to 1994) along with growth rates (Table 1). They do the same for the oxycodone market (Table 2). For Class III and IV analgesics sold in retail drugstores, the writers consider only the prior two years (1993 to 1994), calculating the percent of change and overall market shares for each drug (Table 3).

Annual prescriptions

The writers display, similar to dollar sales, the annual prescriptions for leading Class II analgesics from the prior five years along with growth rates (Table 4). They do the same for the oxycodone market (Table 5). For Class III and IV analgesics, they consider only the prior two years, calculating the percent of change and overall market shares for each drug (Table 6).

Opioid usage by diagnosis/visits

These data came from the National Disease and Therapeutic Index or NDTI. From these data, which are limited to the prior year (January to December 1994), the writers detail several categories of diagnoses for which physicians could prescribe opioids. The categories include postoperative pain, neoplasms

(cancer pain), musculoskeletal pain, arthritis, injury and trauma pain, central nervous system pain, as well as gastrointestinal and urinary disorders. They also include "ill defined" conditions, sickle cell anemia pain, HIV/AIDS pain, and "all other diagnosed conditions." Based on the raw numbers of visits, the writers calculated the percent of visits by diagnosis for Class II opioids altogether (7A, 7B), MS Contin and Duragesic (7C), oxycodone brands (8A, 8B). They ran the same numbers for Class III opioids altogether (9A, 9B).

Opioid usage by medical specialty

The writers also display, for the prior year, prescriptions by medical specialty. Tables 10A and 10B focus on oxycodone prescriptions. At the top of the tables are primary care (including family practice, general practice, osteopathic medicine, and immunology) and surgery (including orthopedic, general, and "all other surgeons). In the middle and bottom of the tables are 16 additional specialties, ranging from dentistry and OB/GYN to pediatrics, physical medicine, and "all other M.D.'s." The table cells show the number of total prescriptions in unrounded numbers (Table 10A) and the percent of prescriptions by product (Table 10B).

Table 11 focuses on "selected leading strong opioid analgesics" for the prior year. This table has two main sections, the first of which shows data on five medical specialties: oncology/hematology, internal medicine, primary care (defined as family practice, general practice, osteopathic medicine), anesthesiology, and surgery (general, orthopedic, neurological, and "other"). The second section shows data on 13 additional specialties, ranging from pulmonary care and neurology to physician medicine, dentistry, pediatrics, and "all others." As in Tables 10A and 10B, the row labels in Table 11 generally correspond to the highest prescribing specialties to the lowest, and for each, the writers calculated both total prescriptions and share of prescriptions.

Spending on journal advertisements

The writers display the money spent on journal advertisements for the oral pain market, which is comprised of Lorcet, Vicodin, Oramorph, Duragesic, Dilaudid, Ultram, Roxicodone, and Percocet. The table is limited to the years 1993, 1994, and 1995, which appear as columns. Because Michael would submit the launch plan in September 1995, the writers divided that year into two columns: 1995 "year-to-date" (current as of May) and 1995 "projected."

Pricing

Table 13 features "the prices for major Class II and III brand and generic products considered to be direct competition for OxyContin." There are four columns: The first is "product," and it shows various opioids on the market, including the product name, the manufacturer, the dosage, and the form (e.g., whether the medication is a tablet or solution). The second shows ex-factory pricing, referring to the cost of purchasing the drug directly from the manufacturer. The third shows the average wholesale prices, and the fourth is "percent spread," which indicates the difference between ex-factory and average wholesale prices.

In their analysis, the writers do not elaborate on this table, but they do show approved pricing for OxyContin at 10, 20, and 40 milligrams, as well as much stronger dosages (80 and 160 mg) that Purdue Pharma was planning. They add, "A thorough and comprehensive price sensitivity study will be conducted to ascertain the optimal price for OxyContin" in various markets (p. 53). Altogether, these forms of cultural knowledge suggest what is going on and what is at stake in the SAF, providing a foundation for the communal rationality behind the launch.

R2: WHAT INTERPRETIVE FRAMES DOES THE LAUNCH PLAN CONSTRUCT?

The 18 tables in the launch plan appendices show that Purdue Pharma held multiple positions within the SAF. For morphine sulfate products, the company was an incumbent: from 1993 to 1994, sales for MS Contin grew by nearly $20 million, a growth rate of 26.5%. This growth "came in the face of stiff competition" from two challengers: Duragesic and Oramorph SR (p. 1). Citing Purdue's own market research, the writers report that "MS Contin has become the gold standard for treating moderately severe to severe cancer pain (W.H.O. Step 3)" (p. 12).

For other products, Purdue Pharma was a challenger. Aside from MS Contin, the writers mention only three other Purdue products in the launch plan: DHC Plus, a dihydrocodeine combination product that came to market in April 1993; "MSIR," which may stand for "morphine sulfate immediate release";

and “MSIR concentrate.” All three medications, along with their pricing, appear in Table 13. Based on the company’s positions as both incumbent and challenger, the writers construct several opportunities in the SAF.

Opportunities

The first opportunity in the SAF: The Class II opioid market

To make this claim, the writers need to downplay the “relatively flat” sales of oxycodone products since 1994 (p. 3). They explain that the sales numbers resulted from the growing availability of generics on the market, but notwithstanding that competition, success is still possible. The leading oxycodone product, Percocet, had reached a sales volume of $44.1 million. Another oxycodone product, Roxicet, had reached a modest $18.6 million but had a remarkable growth rate of 59.8% in the prior year. Strategically, the writers mention that the leading oxycodone products–Percocet, Tylox, and Percodan–are combination drugs, meaning that they contain more than oxycodone alone. They also contain acetaminophen or aspirin. These additional painkillers stimulate an additional neural pathway to relieve pain, but they run the risk of damaging the liver or kidneys.

Relatedly, the writers need to explain away the “relatively flat” growth for oxycodone prescriptions, which, the year prior, had grown only 1.0%, to $11.2 million (p. 5). It could be reasonably inferred from these data that physicians had some hesitance in prescribing oxycodone. Or perhaps there was inadequate market demand generally. Speculating, the writers attribute the lack of growth to the introduction of opioids that are long-acting, a key feature of OxyContin.

OxyContin is a single-entity oxycodone product, so the writers also note the anemic sales for single-entity oxycodone products, which captured only $2 million in sales – less than 2% of the total market. To reassure readers that OxyContin is still viable, they make connections to MS Contin. As mentioned above, MS Contin had become the “gold standard” for cancer pain, with a sales volume of $88 million, a growth rate of $26.4% (p. 12). This growth had come impressively in the face of “stiff competition” from other branded drugs, like Duragesic (a fentanyl patch) and Oramorph SR (a morphine sulfate drug that cost less than MS Contin) (p. 1). The numbers were equally impressive for prescriptions: MS Contin remained strong in that area, accounting for nearly two-thirds of all prescriptions.

However, the patent for MS Contin would soon expire, enabling generic copycats to enter the market by 1997, so the writers emphasize how generics had undermined the sales of other drugs. Generics had already undermined the sales of oxycodone products like Percocet. In addition, they stress that generics were the “dominant-growing force” in hydrocodone combinations, and that generic combination opioids would continue growing overall (p. 6).

Another threat, albeit a minor one, would come from branded drugs, notably Kadian. Kadian is a morphine sulfate drug that, like MS Contin, delivers the active ingredient over much of the day. But unlike MS Contin, Kadian had the potential to secure a “q24h” dosing indication, meaning that patients would only need to take a single pill per day–that is, every 24 hours. The drug had already come to market in Australia, where sales reps had argued that Kadian provided “flatter plasma concentrations” than MS Contin (p. 13). In theory, flatter plasma concentrations signaled greater efficacy. The writers anticipated that Kadian would siphon prescriptions away from MS Contin. Thus, they argue that “one of the major strategies in launching OxyContin will be to replace all prescriptions for MS CONTIN” (p. 3). MS Contin was becoming a liability, and OxyContin could fill that gap and more.

The writers make connections to drugs that already competed with MS Contin in the United States. Duragesic had been selling well since its launch in 1992. However, its growth had slowed “due to problems with its delivery system” (p. 5). Duragesic had also experienced problems with the FDA (pp. 2, 13), creating an opening to capture prescriptions from that patient demographic. Because Duragesic and MS Contin were the only long-acting Class II opioids on the market, they “should be the major competitors” for OxyContin (p. 3).

Another competitor was hydromorphone, which was prescribed largely for cancer pain. Hydromorphone products had grown a modest 6.9% in the previous year, the slowest growth rate of any leading Class II analgesic, to $23.6 million. The writers note that much of that sales volume came from the Dilaudid product line, though generics had reached $4.3 million (p. 2).

The second opportunity in the SAF: The Class III opioid market for cancer pain

Again, connections to MS Contin serve a persuasive purpose. According to the writers, company market research had indicated that “most physicians and nurses” recommended morphine products, like MS Contin, after combination opioids were no longer effective for patients (p. 4). However, these physicians and nurses had shown interest in prescribing OxyContin “in place of the shorter-acting combination opioids, earlier in the treatment cycle than MS Contin or Duragesic for cancer pain” (p. 4).

This market potential for a Class III opioid was significant, and the writers do not minimize the regulatory barriers. Single-entity oxycodone was a Class II opioid, which could not be phoned into a pharmacy. Moreover, some states required triplicate paperwork, and Purdue would subsequently work to reform these regulations.

The third opportunity in the SAF: Specialties outside of oncology and hematology

The writers do not recommend abandonment of the cancer pain market, of course. OxyContin would, in theory, eventually replace all prescriptions for MS Contin, and oncologists represented more than a third of all prescriptions for that drug in a given year. Another third came from primary care physicians. The writers consequently decide that “Overall, oncology/hematology represents the primary target for promoting OxyContin” (p. 11).

Limiting OxyContin to the cancer pain alone would be a significant opportunity cost, given the data on which physicians prescribed oxycodone products. Of all prescriptions for these products, primary care physicians accounted for 28%, and surgeons (especially orthopedic and general surgeons) for 24%. The remainder came from a variety of specialties, but of note, dentists accounted for 15%, and obstetricians and gynecologists for 7.2%.

Purdue would not be the first company to promote opioids to other specialties. The writers state that Janssen Pharmaceuticals, the maker of Duragesic, targeted not only oncologists, but internists and other primary care physicians. Indeed, primary care physicians were increasingly prescribing Duragesic, a sign that the marketing was working. It would be reasonable, then, to follow suit. The writers recommend that “The primary care physicians… must also be considered a primary target, and physician-prescribing information by decile must be used to target the highest potential physicians” (p. 11).

The writers take a step further. Going beyond their data, they emphasize the influence that oncology nurses have on prescriptions decisions, even though nurses may lack prescribing privileges themselves. Similarly, the writers note that, in hospice and home health care settings, it is typically nurses who see patients the most, rate patients’ pain, and recommend the type and dosage of opioid needed for pain control. In short, OxyContin could be marketed beyond cancer care and physicians alone. Earlier in the launch plan, the writers state that Oramorph SR, a competitor to MS Contin that sold at a cheaper price, had benefited from “an aggressive marketing campaign” (p. 1).

Positioning Statements

To take advantage of these opportunities and encourage organizational appropriation (see Fligstein & McAdam, 2011), the writers recommend several positioning statements for OxyContin. The positioning statements, which suggest language for later advertisements, emphasize the cultural values of efficacy and ease.

“All of the analgesic efficacy of immediate-release oxycodone”

This positioning statement appeals to physicians’ familiarity with oxycodone, the importance of which “cannot be overstated” (p. 14). The writers translate this statement into several overlapping selling points, such as “Pain relief begins promptly, within one hour,” “Rapid onset of action,” and “Rapidly effective–upon initiation, most patients can expect relief within one hour” (p. 15).

“All of the ease of q12h dosing”

This statement draws on seven market research studies involving 626 healthcare professionals. The studies had all concluded that q12h dosing– meaning that the drug would slowly release its active ingredient into a patient’s bloodstream over 12 hours–was “the most compelling reason to prescribe OxyContin” (p. 14). With q12h dosing, patients would presumably need to take fewer doses during the day and, as a result, experience more consistent pain relief.

"OxyContin is the opioid to start with… and the opioid to stay with as the disease progresses"

This statement alludes to the WHO analgesic stepladder. The writers claim that there was "No 'ceiling' to analgesic efficacy." Thus, OxyContin could be titrated as far upward as necessary, or in other words, patients could take stronger and stronger doses without losing pain relief (p. 16). Patients could start OxyContin for moderate pain, and continue to take it if the pain intensity increased to severe levels.

These positioning statements could distinguish OxyContin from its competitors, which could change over time. The FDA, a key governance unit in the SAF, was set to approve the drug initially for cancer pain. But after the company had enough clinical trial data to support broader promotions, sales reps could expand the drug into other pain markets. In the meantime, the company should avoid pigeon-holing the drug in the cancer pain market alone. They would need to develop specific strategies and tactics that SAF actors would perceive as "possible, legitimate, and interpretable" (Fligstein & McAdam, 2012, pp. 11, 88, 170).

R3: WHAT STRATEGIES AND TACTICS DOES THE LAUNCH PLAN PROPOSE FOR PURDUE PHARMA?

To leverage the positioning statements and selling points, and to further encourage organizational appropriation, the writers differentiate strategies from tactics. Strategies focus on sites of care, namely fee for service; managed healthcare; hospice care, home care, and nursing homes; hospitals; patients and caregivers; and long-term care.

Strategies

The first site of care is fee for service, where the key audiences are the top physicians (across specialties) who prescribe opioids, as well as oncology nurses. The strategies include the following actions, which blended drug promotion with medical education—potentially a form of innovative action.

- Educate the key audiences on the clinical benefits over other Step 2 opioids, as well as over Step 3 opioids. The writers remind readers that "OxyContin should be positioned as the opioid to start with in Step 2 of the W.H.O. stepladder and the opioid to stay with as the disease progresses through Step 3" (p. 21).
- Use symposia, teleconferences, and other medical education formats to spread word about the clinical benefits of OxyContin. A speaker's bureau for OxyContin was in the works, and once the participating physicians had received their training, the sales force could utilize them.
- Using the AHCPR Clinical Practice Guideline for the Management of Cancer Pain, educate the key audiences on "appropriate" techniques for managing patients' pain. In particular, sales reps should emphasize that "opioids are the cornerstone of pain management," and that the oral route was preferred (p. 21). This was a way of arguing for not only OxyContin in general, but OxyContin over Duragesic (a fentanyl patch) in particular.
- Educate patients and caregivers about cancer pain management, expanding the company's Partners Against Pain Program. Specifically, patients and caregivers should communicate pain and seek help in controlling it.

The second site of care is managed healthcare, where the key audiences are the contract negotiation teams, pharmacy benefit managers, pharmacists, oncologists, oncology nurses, and primary care physicians who prescribed the most opioids. The strategies include:

- Offer contracts with preferred status ratings.
- Develop multi-centered trials to show that OxyContin offers better quality of life and cost savings compared to its competitors.
- Provide continuing education programs to physicians, nurses, and pharmacists on pain management principles. These programs would emphasize OxyContin as the preferred Step 2 opioid.
- Provide the Partners Against Pain program as a value-added service, along with other organization-specific programs to educate health care professionals on pain management.

The third site is hospice care, home care, and nursing homes, where the key audiences are medical directors, consultant pharmacists, nurses, patient care coordinators, and continuing education coordinators. The strategies include:

- Give in-services at organizations serving patients with cancer pain. As at other sites of care, sales reps would emphasize the benefits of OxyContin as a Step 2 opioid. In addition, they would emphasize the ease and frequency of OxyContin dosing (which provides “around the clock pain relief that allows patients to sleep through the night and plan out their days”), its cost effectiveness, and its short administration time compared to shorter-acting opioids, like Percocet (p. 23).
- Offer the Partners Against Pain Program “to assist in empowering the patient” (p. 23).
- Offer a hospice rebate program modeled after the one for MS Contin, which would take a percentage off the ex-factory price for all patients at the facility.

The fourth site is hospitals, where the key audiences are all cancer centers in the United States (n ≈ 1,200), all major teaching institutions (n ≈ 1,200), and all community hospitals with more than 100 beds (n ≈ 2,500). The strategies include:

- Call on all hospitals during the first three months of launch, convincing pharmacy directors to stock OxyContin.
- Educate the target audiences on the benefits of OxyContin compared to other Step 2 opioids for cancer pain. The education should convince hospital staff to prioritize OxyContin as their “opioid of choice,” emphasizing the ease of use, shorter administration time, and if available, clinical studies that show improved quality of life and cost effectiveness (p. 24).
- Deliver educational lectures through the company’s speaker bureau during tumor boards, grand rounds, etc. The bureau should present data from clinical studies while educating the staff about the benefits of OxyContin.
- Conduct educational symposia that provide CME credits for physicians, nurses, and registered pharmacists. The symposia should focus on the AHCPR Clinical Practice Guideline for the Management of Cancer Pain, alongside data from clinical trials with OxyContin.
- Host a “special pain management day” at the top 100 hospitals that prescribe MS Contin and Duragesic, allowing clinical investigators at Purdue to train the hospital staff on OxyContin (p. 24).

The fifth site is patients and caregivers, along with social workers and volunteers. The strategies include:

- Develop educational materials, such as a patient video and assessment journal, to help patients communicate about their pain.
- Compile a “patient empowerment pack” to assist pharmacists with patient counseling. The pack would include the AHCPR patient guideline for cancer pain, a comfort assessment journal, and patient education brochure on OxyContin (p. 25).
- Implement a consumer awareness program, specific to OxyContin, to educate “about the tragedy of needless suffering that occurs in millions of cancer patients every year.” The program could be done in collaboration with the American Cancer Society or another major medical organization, and the main focus would be “you don’t have to suffer and something can be done about your pain.” In addition, the company could offer a 1-800 number that allows patients and caregivers to receive more information about managing cancer pain (p. 25).
- Support existing medical education programs like “I Can Cope” from the American Cancer Society. “I Can Cope” teaches patients and caregivers how to navigate issues surrounding cancer and its treatment, with only a minor emphasis on pain management. Still, support from Purdue, such as an educational seminar to “train the trainer,” could be viewed favorably (p. 25).

The sixth site is long-term care, where the key audience is consultant pharmacists. The strategies include:

- Develop programs and materials to help educate the key audience on pain management. The objective would be to make consulting pharmacists “experts in pain management,” who would then team care providers in long-term care facilities (p. 26).
- Offer discounts on the wholesale acquisition price of OxyContin.
- Focus the sales force on raising the awareness and brand recognition of OxyContin, contacting, in the first year, all closed-provider pharmacies within their sales territories.

Table 1: Communal rationality expressed in the OxyContin launch plan, based on the three-point heuristic of strategic action fields. The strategies and tactics displayed here are only a partial list.

Research Question	SAF point	Launch plan element	Examples
1	What is going on and what is at stake	National and state laws*	Omnibus Budget Reconciliation Act (OBRA) of 1990
			Triplicate paperwork requirements
		Guidelines	World Health Organization (WHO) analgesic stepladder
			Agency for Health Care Policy and Research (AHCPR) Clinical Practice Guideline for the Management of Cancer Pain
		Classes of Analgesics	Class II: Morphine sulfate, oxycodone, fentanyl, meperidine, hydromorphone, plain codeine, methadone, levorphanol, oxymorphone, and opium alkaloids
			Class III: Combinations with dihydrocodeine, hydrocodone, or codeine
			Class IV: Propoxyphene and pentazocine
		Industry Activity	Dollar sales
			Annual prescriptions
			Opioid usage by diagnosis, visits, and medical specialty
			Spending on journal advertisements
			Pricing
2	What interpretive frames are constructed	Opportunities	The Class II opioid market
			The Class III opioid market for cancer pain
			Specialties outside of oncology and hematology
		Positioning Statements	"All of the analgesic efficacy of immediate-release oxycodone"
			"All of the ease of q12h dosing"
			"OxyContin is the opioid to start with… and the opioid to stay with as the disease progresses"
3	What the "rules" are	Strategies based on sites of care	Fee for service: Educate on clinical benefits of OxyContin through symposia and teleconferences, develop a speaker's bureau
			Managed healthcare: Offer contracts with preferred status ratings, provide the Partners against Pain program
			Hospice care, home care, and nursing homes: Hold in-services, offer rebate programs
			Hospitals: Convince pharmacy directors to stock OxyContin, conduct educational symposia, host a special pain management day
			Patients and caregivers: Compile a "patient empowerment pack," support the I Can Cope program from the American Cancer Society
			Long-term care: Offer discounts on the wholesale acquisition price of OxyContin, contact all closed-provider pharmacies in the first year of sales
		Tactics	External tactics: Deliveries from sales reps, mail programs, journal advertisements, public relations initiatives, and convention exhibits
			Internal tactics: Training binder, product knowledge quiz, launch meeting

Tactics

For each of the strategies above, the writers divide the tactics both "vertically" and "horizontally." Vertically, the tactics are divided into three tiers. Tier I tactics "offer the most immediate return on investment, are essential to the launch, and must be implemented." Tier II tactics "offer return on investment in the short term, would augment the launch, and must be seriously considered." Tier III tactics "provide long term return on investment and should be considered if product sales exceed forecast" (p. 26).

Horizontally, the writers divide tactics into domains that specify activities, audiences, timelines, and the estimated budget. The domains include deliveries from sales reps, mail programs, journal advertisements, public relations initiatives, and convention exhibits.

To prepare for their roles as both marketers and "educators" in the launch, the sales reps would need additional training, arguably a kind of internal tactic. The writers recommend a training binder that contains relevant clinical data and information about the competition, centering on the benefits of OxyContin for healthcare professionals and patients. A "product knowledge quiz" could gauge the sales reps' depth of knowledge (p. 56).

The second internal tactic is two days of training at a separate launch meeting. Consisting of workshops, the meeting would explore such topics as findings from clinical studies, the features and benefits of OxyContin, expected objections from prescribers, and sales aids, among other things. Additional training modules would come later (p. 56).

The writers estimate resource allocations for the tactics, along with grand totals, attempting to reinforce organizational appropriation: At the time of launch, there would be 291 sales reps, 39 managers, 6 national accounts managers, and 15 managed care account executives, and the cost of staffing each position was approximately $135,000 per year (p. 54). The first year post launch, the sales force would devote 70% of their primary calls to OxyContin, and it appears that the total sales and marketing costs would come to approximately $34 million. OxyContin was projected to turn a negative gross profit initially (-52%). But it was projected to turn a 12% profit its second year, and 67% its fifth year (pp. 54A-E, 55A-F). In short, given the communal rationality expressed in the launch plan, OxyContin had selling potential in the SAF, but company executives and managers should not expect significant profits in the near term.

DISCUSSION

The launch plan was an effective one, in some ways an exemplary piece of TPC. In the years that followed, OxyContin became a runaway success, with sales growing from $48 million 1996 to over $1.1 billion in 2000 (Van Zee, 2009). By 2001, the volume of prescriptions made OxyContin a bestselling painkiller in the country (General Accounting Office [GAO], 2003). These market gains had not come cheaply. Between 1996 and 2002, the promotion budget for OxyContin was up to 12 times larger than the promotional budgets for its two main competitors, MS Contin and Duragesic (Van Zee, 2009). Michael's team of writers thus had exercised considerable social skill in their SAF: casting OxyContin in a positive light, casting competitors in a negative light, and eliciting cooperation where needed. The communal rationality expressed in the launch plan had evidently struck its corporate readers as both sensible and persuasive.

Absent from the launch plan, troublingly, is a discussion of "the ethical repercussions of one's words" (Miller, 1979, p. 617). The launch plan does contain several references to the "ethical field force" (pp. 27, 28, 55A, 55C). Yet, in those references, "ethical" indicates sales reps, not values that govern conduct. Indeed, the writers propose strategies and tactics that, at least with the benefit of hindsight, are problematic. First, the writers do not consider the ethics of promoting a Class II narcotic—the riskiest products that external governance units, like the FDA, allow—so broadly and aggressively in the SAF. Second, the writers make primary care physicians prime targets for OxyContin, a decision that has attracted extensive criticism (e.g., Hughes et al., 2019; Schottenfeld et al., 2018).

While this promotion is not excusable, the launch plan does reveal some of the underlying motivations. Among them: researchers had persuasively but wrongly argued that fears of opioid addiction were overblown (Meldrum, 2016), and so the writers of the launch plan highlight the upward titration potential. Moreover, many physicians across specialties, including primary care, were already prescribing opioids in significant numbers, so while Purdue sales reps did not necessarily light the match, they did pour fuel on the flames. Future studies might examine how innovative it was to position sales reps as not just sellers, but educators.

This too, may have been a serious ethical violation as Purdue Pharma worked to expand the WHO analgesic stepladder, blurring the lines between education and marketing. Both education and marketing were permitted, even endorsed, under industry standards at the time (International Federation of Pharmaceutical Manufacturers Associations [IFPMA], 1994). However, the standards also urged "self-discipline" (IFPMA, 1994), and positioning sales reps as both sellers and educators almost certainly created conflicts of interest. Technical communicators who work in biomedical industries must be cognizant of such conflicts and, as needed, seek professional development in health literacy, bioethics, and marketing ethics. At minimum, marketing should not be disguised, and companies that do participate in educational activities must ensure that the materials are "fair, balanced and objective, and designed to allow the expression of diverse theories and recognized opinions" (IFPMA, 2019, p. 29).

Still, many healthcare workers have questioned whether the pharmaceutical industry should play such a large role in medical education. For instance, a few years before the OxyContin launch, one physician reasoned, "If you were buying a used car, would you get your information from Sam, the friendly used-car salesman?" (Waud, 1990, p. 352). He continued, "I have heard anecdotes about occasional pearls passed on by detail men [pharmaceutical sales reps], but generally, the 'education' is a thinly disguised selling job. And they are good at it" (Waud, 1990, p. 353) Similarly, another physician proposed, "public health would be best served by severing the pharmaceutical industry's direct role and influence in medical education," at least for controlled drugs, which run a high risk for abuse and diversion (Van Zee, 2009, p. 225). Positions like these are not unwarranted.

Unfortunately, Section 5.8 contains the only reference in the launch plan to potential abuse, and there are none to diversion, the illegal transfer of OxyContin to someone other than the patient. There are also few references to safety, monitoring, and potential harms more broadly. True, scientific knowledge has advanced since 1995, when Michael submitted the launch plan to his colleagues in Norwalk. But the launch plan illustrates a problematic trend of stigmatizing users themselves through reductive terms like "abusers." In Section 5.8, for example, the writers state that pharmacists may be reluctant to stock Class II opioids, like OxyContin. "This reluctance," the writers explain, "is based on fears that drug abusers will try to obtain these drugs for other than medicinal purposes." The proposed solution is an appeal to financial motivations: promotional copy should emphasize that MS Contin had been an "incredible success" (p. 27). MS Contin had indeed created a sizable market for extended released painkillers, generating profits for pharmacists and helping grow their business. Pharmacists could expect, then, that OxyContin had similar market potential. However, OxyContin would have a much higher potential for misuse, and the repeated comparisons to MS Contin, in the launch plan and elsewhere, would devolve into "a reliance on faulty analogies" (Griffin & Spillane, 2012, p. 166). Furthermore, the term "abusers" could be a form of racial or class coding, contributing to later inequalities in opioid prescriptions (Parker & Hansen, 2022). The launch plan is, in these ways, an example of communication failure (cf. GAO, 2003).

Granted, the writers could not have anticipated the human misery that followed, and the final draft of the launch plan reflects a complicated mishmash of corporate influences. But the launch plan can still stand as a cautionary tale for technical communicators today. As a partial safeguard, technical communicators must elevate their professional ethics above the "concepts, values, traditions, and style" (Miller, 1979, p. 617) of the biomedical discourses that they produce. Beyond that, we must work to reimagine the boundaries of these discourses and advocate for more culturally responsive, inclusive approaches to TPC (Alexander & Edenfield; Frost, 2018; Frost et al., 2021; Green, 2021; Itchuaqiyaq et al., 2022; Walwema, 2021; Wang, 2021)—pre-launch, peri-launch, and post-launch. These efforts can support calls in the pharmaceutical industry to build cultures of trust (IFPMA, 2019).

Methodologically, this article suggests the usefulness of SAF, which I took as a three-point heuristic. The heuristic foregrounds what is going on in the SAF and what is at stake, interpretive frames that actors construct to understand each other's actions, and what the rules of the game are. Applied, the heuristic highlighted key datapoints supporting the writers' arguments, (perceived) opportunities related to Purdue Pharma's positions as both incumbent and challenger, and an elaborate set of strategies and tactics centered on specific positioning statements and selling points—in

short, the communal rationality expressed in the launch plan. These findings align with Guiltinan (1999), who described strategies as the "what, where, and when" and tactics as the "how" (p. 514). In product launches, companies often focus on targeting strategies, timing strategies, and strategies that showcase the innovativeness of the product, and the launch plan for OxyContin arguably exemplifies all three.

Continuing this line of inquiry, future research might examine the influence of the Purdue Pharma Partners Against Pain program, the speaker's bureau, and the continuing education symposia described in the launch plan. Outside of Purdue, future studies might investigate, amid the ongoing crisis, the communal rationality of large distributors of opioids (such as Cardinal Health, McKesson, and AmerisourceBergen) as well as other makers of opioids. An insightful case study may be Janssen, the maker of Duragesic. After its launch, Duragesic was initially well accepted among health professions, grew steadily in market share, but was recently discontinued. Other case studies might explore what Fligstein and McAdam (2012) call "episodes of contention," borrowing from social movement theory. Episodes of contention are characterized by innovation, a sense of uncertainty or crisis, and sustained mobilization by both challengers and incumbents, resulting in competing interpretive frames. Studies like these may, in turn, advance the notion of SAF, which, at its heart, rests on the problem of order (Fligstein & McAdam, 2012, p. 12).

To further nuance the three-point heuristic, future research might investigate the interplay of *mnesis* (remembering and forgetting) *taxis* (arrangement of parts of a topic, including tables and figures) in biomedical discourses (DeTora, 2021; Stormer 2004, 2013). These rhetorical concepts can apply not just to a single document, but to a collection, allowing researchers to track changes over time and across genres. As more examples become available, we might explore how launch plans have evolved in the pharmaceutical industry. We might also explore how launch plans function in larger "genre ecologies" (Spinuzzi & Zachry, 2000), which may include clinical trial paperwork, launch meetings, promotional materials, product packaging and labeling, regulatory writings, federal hearings, scientific journal articles, and public comments.

Given the breadth of genre ecologies, these studies may require "big data" approaches, which Graham (2021) and Gallagher et al. (2019) have demonstrated helpfully. Graham (2021) did a "computational rhetorical analysis" (p. 27) of how language surrounding opioids changed after government organizations adopted the "fifth vital sign" metaphor, sampling from top medical journals. Gallagher et al. (2019) analyzed patterns in sentiment, themes, geolocations, and comment frequency in a corpus of approximately 450,000 public comments, all posted to the *New York Times* website. Either approach may provide additional insight into biomedical discourses, communal rationality, and SAF dynamics, including those in product launches.

In future research, we might also draw on "tactical TPC" streams of scholarship (see Kimball, 2017; Randall, 2022). For instance, post-launch studies might investigate how non-organizational actors, such as patients and caregivers, exercise social skill to present themselves credibly, navigate risk, and (successfully or not) try to get the help and resources that they need. Molloy (2020), among others, has broken ground in this area, examining how patients in vulnerable circumstances construct rhetorical ethos amid race, class, and gender biases. TPC researchers might extend this research to stigma surrounding opioid use disorder and overdosing, adopting culture-centered approaches designed to reduce inequities (Dutta, 2008; see also DeTora & Robinson, 2022; Frost et al., 2021). Culture-centered approaches may help address the disparities that Welhausen (2022, 2023) found in public reports of the opioid crisis, generating deeper insights into how victims have been inequitably (re)presented and treated. We might also examine the evolving social significance of oxycodone, which, as the launch plan suggests, was an important medication for those suffering from HIV/AIDS. Studies in this vein are particularly important because as the historian David Courtwright (2001) has observed, "what we think about addiction very much depends on who is addicted" (p. 4).

These are only a few paths forward, and granted, the United States opioid crisis is not the only pressing public health issue that merits greater attention in TPC scholarship. But efforts to address the opioid crisis must remain a high priority however long it lasts, being "one of the largest and most complex public health tragedies that [the United States] has ever faced" (Gottlieb, 2019). The launch plan for OxyContin provides a valuable point of entrée.

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Convergent Practices in Social Media Videos: Examining Genre Conventions in Business-to-Consumer Content

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By Brandon C. Strubberg and Chase Mitchell

ABSTRACT

Purpose: Technical communication (tech comm) and marketing communication (marcomm) are converging in business-to-consumer (B2C) contexts. Convergent videos integrate practices from both genres to address ever-changing digital audiences. In this paper, we review available literature and analyze tech comm and marcomm social media videos to demonstrate traditional genre conventions. We then analyze a select couple of convergent social media videos to delineate genre conventions across genres. We end by considering four unique convergent strategies that these videos used in combining elements of the tech comm and marcomm genres.

Methods: We selected several social media videos produced by large home improvement brands to analyze the generic practices they employ in relation to accepted best practices in the literature from scholars in tech comm and marcomm. We then analyze videos that fit neither genre in light of recent publications by Adobe discussing genre convergence and note several distinct genre practices that can be ascribed to convergent videos.

Results: We find that convergent characteristics are distinct from tech comm and marcomm. The brands employ convergent practices in some social media videos that blend genre conventions from tech comm and marcomm video production. Specifically, we identify four ways that these genres converge: using technical tasks as marketing opportunities, balancing corporate branding with mundane user ethos, layering content pathways across the interface, and capturing attention with relevance.

Conclusion: Convergence represents a new genre in that it purposefully attempts to engage users across the product lifecycle in single videos. This approach is a departure from traditional marcomm and tech comm video production. Though limited in scope, this analysis provides examples of how convergent videos attempt to achieve this goal. We end by noting our limitations and offering suggestions for future research.

Keywords: Instructional Video, Marketing Video, Content Strategy, Convergence, B2C Social Media

Practitioner Takeaways

- Define marcomm and tech comm video genre conventions according to recent studies and industry best practices.
- Identify marcomm and tech comm convergence in B2C social media video content.
- Recognize emerging convergent practices in social media videos.

Genre Conventions in Business-to-Consumer Content

In 2017, Adobe published two white papers (Samuels & Aschwanden, 2017; Urbina, 2017) demonstrating the convergence of technical communication (tech comm) and marketing communication (marcomm) for deploying strategic, multi-use, and effective content. This article seeks to expand the discussion about convergence in business-to-consumer (B2C) social media videos. Currently, this conversation is taking place largely within corporate publications, such as white papers and consulting blogs. To illustrate this nascent convergent genre for academic and professional technical communicators, we have prepared a case study of select B2C social media videos from the home improvement industry that engage traditional genres and convergence.

Retailers including Lowe's Home Improvement (Lowe's) and The Home Depot (Home Depot) have long produced separate B2C videos for marketing and instructional purposes. Recently, however, these brands have increasingly published videos that deploy elements of tech comm and marcomm in the same videos, much in the convergent style that Adobe's recent white papers discuss.

Typically, Lowe's and Home Depot produce *presale* videos that function as marcomm products, serving to attract customers to the brick-and-mortar or online stores to purchase materials for home improvement projects. Both companies also have vast libraries of *postsale* video content. Postsale videos function primarily as tech comm products, serving to instruct users how to perform the requisite tasks to accomplish their home improvement projects. In more recent B2C videos, though, we find that the two companies integrate elements of both presale marketing strategies and postsale technical instructions. This kind of convergence in B2C content can be found in videos throughout the home improvement industry, but, until recently, such practices have been haphazardly applied. In the next section we discuss recent scholarship of video production from both tech comm and marcomm and then consider convergence as explicated in the literature.

B2C VIDEO CONTENT

Tech comm

Most current research into how-to videos from scholars in tech comm focuses on examining their effectiveness as tech comm products, often drawing, according to van der Meij and van der Meij (2013), from educational psychology and instructional design. Video instruction standards are not well established despite the field's discussions of video for tech comm purposes dating back to the 1970s (Mogull, 2014). Morain and Swarts (2012) note that communication principles for print instructional documents have been haphazardly applied to video instructions. Such a lack of any clear principles is a problem given new media landscapes. Mogull (2014) asserts that the widespread adoption of smartphones in the early 2010s has led to increased production and availability of instructional video content. YouTube's extensive video database included 585 million how-to videos as of March 2018 (Eriksson & Eriksson, 2019). With this democratization of video content, though, these videos are inconsistent in quality: "such low-cost and easy-to-use communication technologies are often associated with idiosyncratic applications of design features that often do not transfer into effective communication" (Mogull, 2014, p. 341).

The proliferation of and ease of using video production software—along with other digital genres—has certainly affected the instructional genre. Pflugfelder (2013) argues the manual has evolved within digital environments, taking various shapes, such as wikis, message boards, and short videos. "What we are seeing in the Web app video," he writes, "is a relatively new form, one that functions as a quick-start guide, not a complete manual, and often promotes the product while it introduces it" (p. 133). This contention is one of the few acknowledgements of a shift or combination of instructional and marketing content, with Swarts' (2012) recommendation to "seduce the viewer" being a notable exception (p. 204).

Selber (2010) argues that the web incubates new genres. These innovative approaches to old kinds of documentation are influenced by responsiveness, or interactivity, an important consideration, especially in the age of smartphones and social media. Pflugfelder (2013) notes that longer instructional videos can mirror comprehensive print instructions by providing detail, multiple chapters, clear visuals, and imperative language, all while providing "dynamic visual information" (p. 133). The dynamism of these video instructions alters how users interact with the content and encourages new takes on "reading" the information. Users often take one of two strategies when reading instructional

documents: read linearly through the entire instructional document before performing the task, or begin the task until they need help, at which point they interact with the document by skipping to the information they need. Video instructions can address both kinds of instructional strategies. Thus, according to van der Meij and van der Meij (2013), video instructions should be short enough to view linearly before starting the task. Additionally, the responsive nature of digital controls enables users to interact with the video, scrubbing forward or backward to jump to specific sections of the instructions as needed.

Marcomm

Just as tech comm is affected by video content, marcomm is being shaped by digital video genres and platforms. Much online research and shopping is driven by video content because, as consumers have become increasingly savvy in their knowledge of product markets, potential customers research more than product prices. Google (2018) reports that more than half of shoppers say online video has helped them decide which specific brand or product to buy, and more than 90% of people say they discover new brands or products on YouTube.

As the world's largest video hosting platform, second most-used search engine, and second most-visited website (Collins & Conley, 2020), YouTube has become an essential platform for brand practitioners to leverage in video marketing strategy: it has seen a "110% year-over-growth in watch time of 'which [product] to buy' videos" (Google, 2018, n. p.). Andersen (2019) notes that over 80% of retail shoppers conduct online research before buying. Using powerful online databases and shopping sites, they compare product specifications, peruse user reviews, and rely on other data points to help them make informed, personal choices regarding what, when, and where to buy. Social media has made this kind of market research even more ubiquitous, as consumers can follow their favorite brands' accounts for a steady stream of information about new product releases, brand sponsors, and sales and promotions.

Facebook is the world's most popular social networking site; the platform's 2.7 billion users (Statista, 2020) can upload and share video content in much the same way as YouTube users. The difference is that Facebook users passively encounter native video (i.e., directly uploaded to that platform; not linked from elsewhere) on their feed, whereas YouTubers actively seek out video content via keyword searches or by subscribing to channels. Categorizing YouTube as a social platform is a "bit of a chimera [. . .] Most people on YouTube aren't actively creating videos, though they might be participating in the comments or subscribing to channels" (Cooper, 2019, n. p.). YouTube does recommend videos and channels according to one's subscriptions and viewing history, but users are more likely to look for specific content using the search function. Facebook users, on the other hand, rarely search for native video content; they are much more likely to rely on their in-feed suggestions. Still, 78% of American consumers have found products to purchase on Facebook (Conley, n. d.), which suggests that even though users do not engage with content in the same way that they do on YouTube, branded video content on Facebook also influences buying decisions. Instagram is another social platform where video marcomm has become ubiquitous. According to Hootsuite, over a billion people use the platform every month for an average of 30 minutes a day (Newberry, 2021). Instagram users, like YouTube's and Facebook's, leverage the platform to research and buy things: 81% of users seek out products and services; 130 million users tap on shopping posts every month; and 50% of people have visited a website to make a purchase after seeing a product or service (Newberry, 2021).

Convergence

As the home and garden B2C e-commerce market is projected to grow by over a hundred billion dollars from 2020-2024 (Businesswire, 2020), effectively harnessing the power of video is essential for companies like Home Depot and Lowe's to grow and sustain market share. This strategy is informed by the *convergence* of B2C video marcomm and tech comm. Because the most successful brands do not rely merely on wooing potential new customers, but on retaining existing ones (Bernazzani, 2020), by providing video content that is both entertaining and informative, such as product tutorials, DIY projects, and seasonal project ideas, brands create value for existing customers and increase the likelihood that they will keep that business. Urbina (2017) notes, "The relationship is not done when the sale is closed. In a globalizing, hyperconnected marketplace, the strength of the relationship over its lifetime is key to delivering competitiveness and

profitability. Customers must be supported from purchase through to advocacy and, most important for large brands, re-investment" (p. 5).

Until recently, however, companies typically conceived of and produced social media videos that functioned as *either* presale marketing content *or* postsale technical content. These kinds of "silos between marketing and tech comm teams represent traditional separations of leadership, decision-making, funding and strategy inside the enterprise, rather than customer needs or the reality of multichannel experiences. Departmental silos are number one killers of great customer experiences" (Urbina, 2017, p. 5). But things are changing, and the new convergence of these two kinds of video content, particularly in the home improvement industry, is illustrative of the potential for new and emerging forms of content strategy. A perusal of Home Depot's and Lowe's YouTube channels and Facebook pages reveals that many of their videos from the past five years function primarily as either presale (marcomm) content or postsale (tech comm) content. In both kinds of videos, however, the companies mix genre conventions. Videos that primarily target presale customers and sell products often integrate tech comm content. And videos that primarily serve postsale customers to provide technical/instructional content also often integrate marcomm content by highlighting company products, promoting deals, and announcing new product releases. Despite existing mashups of genre conventions in pre- and postsale video content, these practices have been seemingly random and rhetorically haphazard.

The two companies increasingly have adopted a more deliberate, strategic approach to video content convergence for several reasons. Consumers are more discerning with their purchasing decisions, so companies must adapt their presale marcomm content to provide "enough technical details so potential buyers can make an informed decision [. . .] the days of glossy but vacuous marketing content are coming to an end" (Samuels & Aschwanden, 2017, p. 3). Brands must provide enough technical information for consumers to evaluate the products. Consumers want to know both that the product is the best option on the market and why, specifically for them, that is true, alongside other information, such as how the product works.

Just as presale videos have evolved to include more technical/instructional content, postsale videos have started to integrate marcomm content. Samuels and Aschwanden (2017) state that postsale content "has always focused on providing enough technical details to use the product, is now evolving to provide more useful information based on business goals, is presented in a more usable way, and made available in a helpful format" (p. 3). Companies now understand that videos presenting product reviews, tutorials, and DIY projects engage and retain existing customers. Customers do not distinguish between pre- and postsale content while researching products on YouTube and Facebook, so companies can produce videos that engage marcomm and technical/instructional content.

There are other reasons for brands to produce convergent video content. First, marketers and content strategists are "facing multiple challenges: channel proliferation; global/local balancing acts and their associated costs; and of course, customers who are increasingly informed, empowered to self-serve across their lifecycle, and quick-to-switch if experiences disappoint" (Urbina, 2017 p. 4). Video content that serves multiple purposes across the customer lifecycle addresses these challenges strategically and economically. Convergent content increases customer engagement, makes content production faster, and enhances relationships between customers and brands that drives revenue, while also saving resources by avoiding "re-creating or copy-pasting content that has to be laboriously kept up to date in multiple deliverables" (Urbina, 2017, p. 9). Combining the previously disparate pre- and postsale genres can unify content strategy, reduce costs, and streamline user experiences. By "aligning, or better yet, unifying strategies and platforms across the two major communication departments in your enterprise [practitioners] could move the needle on many core content goals" (Urbina, p. 2).

Evolving consumer demographics have influenced the shift to convergent content as well. Bacon (2015) notes that millennials "feel a growing affinity for brands that help them to take control of their lives and offer worthwhile experiences rather than more possessions" (para. 1). Products offering experiential value to these consumers are often an attractive draw for this group. By illustrating hands-on experiences in video content—that at once market products and demonstrate product utility—companies like Home Depot and Lowe's can capitalize on this demographic's preferences.

Although such convergence has affected institutional practices for some time and is only

accelerating, the phenomenon has not been addressed in scholarly research. There have been industry studies and white papers that consider tech comm and marcomm convergence, but they are focused on business-to-business (B2B) marketing (Samuels & Aschwanden, 2017; Urbina, 2017) and do not focus on video content. Our own search for existing work on convergence, tech comm, and marcomm results in few relevant scholarly works. A notable exception is a recent integrative literature review about content strategy from Dave Clark (2016). Though convergence does not appear in the review, his conception of the umbrella of content strategy would include convergence: "content strategy must include the perspectives of all types of communication—marketing, user experience design, and web publishing—as well as professional and technical communication because the discussion occurs in all of these branches" (p. 11).

It might seem that this article overly relies on corporate publications, but such an approach is necessary. Clark (2016) himself notes the scarcity of scholarship in content strategy, a trend that also applies to research on convergence. Thus, his work and ours rely "on trade literature: industry magazines, professional blog postings, and websites with a third-party editor" (p. 13). As a testament to the quality of the white papers we cite for convergence, Clark too cites Urbina's work in multiple instances.

Based on the limited literature available, we sought video content for analysis that makes the following convergent moves: demonstrates procedural tasks (though may not identify all steps); incorporates tasks that foreground branded products; calls to action for purchasing decisions; targets interested audiences on social media; provides means to purchase products; and is brief enough to market products but long enough to demonstrate a task. We analyze these initial convergent practices in the videos of this case study. This article seeks to provide both researchers and practitioners an entry point into examining convergence and fill the gap in convergent scholarship by analyzing select B2C social media videos that engage traditional genres and convergence.

RESEARCH QUESTIONS AND METHODS

In this article, we present a case study of select videos from the Facebook, Instagram, and YouTube accounts of Home Depot and Lowe's. We first examine videos that align with genre practices for both tech comm and marcomm video content creation. We then use those examples of instructional and marketing videos to compare with apparent convergent content—as defined by Samuels and Aschwanden (2017) and Urbina (2017)—to discuss how the traditional genre conventions are used in convergent content. Our goal is to illustrate the differences between traditional genres and convergence and aid technical communicators in understanding the genre and how to think strategically about convergent content. As Clark (2016) notes, case studies are needed for this kind of work: "Without specific case studies and methodologies, professional and technical communicators have difficulty imagining how to kick off a content strategy initiative within an enterprise" (p. 18).

In this study, we examine the following research questions:

- What are the genre conventions of traditional postsale instructional tech comm videos?
- What are the genre conventions of traditional presale marcomm videos?
- How do convergent videos use tech comm and marcomm conventions to address their audiences?

Convergence is inherently instructional. Therefore, we decided to look for convergent practices in content produced by brands that typically supply instructional information for their customers. That goal led us to home improvement suppliers: Home Depot and Lowe's. We searched their social media and video platforms—YouTube, Facebook, and Instagram—for content that exhibited both marcomm and tech comm practices. We selected six videos that demonstrate the ways these traditional and convergent practices have been deployed in these companies' content. We identified two marcomm videos, two instructional videos, and two that reflect convergent practices.

We analyze each video to determine how the creator constructs videos within the marcomm and tech comm genres. We then perform the same kind of analysis on the convergent videos and consider how they appropriate practices from those genres to establish a unique convergent genre in line with Adobe's analysis of convergence. Our analysis seeks to confirm the use of existing practices in instructional and marcomm genres and identify novel uses of those practices in convergence.

This analysis naturally aligns with Selzer's (2003) notion of rhetorical analysis in asking why textual and design decisions are made and "how th[e] message is crafted to earn a particular response" (p. 282).

In the following section, we use marcomm presale videos to demonstrate best practices according to marketing researchers and professionals. We then use instructional videos to demonstrate best practices according to tech comm research. Once we have described those genres' best practices, we then compare them to select videos that adopt both in convergent ways.

ANALYSIS

Marcomm Presale Videos

Table 1. Metadata for The Home Depot's video "Kidde Fire Safety"

Video Title	Date Posted	Location	Length	Views
Kidde Fire Safety	October 6, 2020	Facebook	0:32	>21k

Table 2. Metadata for Lowe's Home Improvement video "Build an Easy Planter Box in Less than 2 Hours"

Video Title	Date Posted	Location	Length	Views
Build an Easy Planter Box in Less than 2 Hours	June 21, 2018	Instagram	0:21	>9.6k

The Facebook video titled "Kidde Fire Safety" (fire safety video) markets fire safety products (extinguishers and alarms). Kidde is a brand carried by Home Depot. Table 1 shows relevant metadata for the fire safety video. The video is structured in a manner typical of video marcomm on social media platforms. The Instagram video titled "Build an Easy Planter Box in Less than 2 Hours" (planter box video), too, is primarily marcomm; that it is posted only on Instagram is evidence of its marcomm purpose. Table 2 shows relevant metadata for the planter box video. DIY viewers are not going to actively seek out how-to videos on the platform in the same way they do on YouTube and, even if they did, would not find this one useful as it is merely a truncated, playful video that serves to give potential buyers an idea of a project they might do with Lowe's products.

Both videos adhere to many best practices cited by video marketing professionals. They are relatively brief, for example, which, according to research, makes for effective marcomm videos. In general, videos should be kept under two minutes, though "optimal video length varies depending on where you share or embed it" (Gillespie, 2019, n. p.). Chi (2018) found that Facebook users are most likely to watch in-feed videos that are one minute or less and suggests that YouTube in-channel videos are most effective at two minutes or less.

Marcomm videos should be mobile friendly, too. Ellet (2018) cites a recent study by the ROBO (Research Online Buy Offline) Economy that says 82% of retail shoppers consult their smartphones on purchases they are about to make in-store, which suggests that marcomm videos need to be visually clear and informationally useful on mobile devices, including making sure any text is large enough to read on the smaller screen (AdAge, 2020). Both above videos are mobile friendly because their design affords easy viewing with large text and clear images. Related to mobile considerations, marcomm videos should adhere to the "silent movie" rule (Olenski, 2018), which is important because 96% of mobile Facebook users do not wear headphones in public (Statista, 2020b). Since Facebook's (and most other platforms') default settings automatically mute in-feed video content, users do not hear the audio, so videos need to employ captions, text, and/or graphics to ensure viewers do not miss information that would otherwise be presented in audio form such as a voiceover. Both the fire safety video and the planter box video avoid voiceover narrative and dialogue, though both integrate music. In doing so, they adhere to the silent movie rule.

Marcomm videos should convey a clear, customer-focused message (Gillespie, 2020), and include a call to action while avoiding overtly sales-focused requests. Olenski (2018) notes, "Most people want solutions to their problems, but they do not want to have to listen to a sales presentation. Your message will simply be tuned out if your audience gets the idea that you are only interested in their money" (para. 10). The fire safety video's title cites a specific brand product by name and simultaneously references the function of the brand's products. The title is a direct appeal to purchase Kidde products from Home Depot and is a strength from a marcomm perspective. Also, there is a link in the video description to purchase the featured products online.

The planter box video is more subtle with its sales requests. It interjects a brief shot of products to complete the project (Kobalt power drills and saw), though there is no direct call to action; it is an indirect appeal.

Marcomm videos should hook the audience early with engaging content, ideally within the first ten seconds by using recognizable branding and front loading the message (Gillespie, 2020). The fire safety video opens with large block lettering that clearly identifies the content of the video, which is immediately followed by a visually appealing animation of a fire extinguisher sweeping across the screen that functions as a transition into the video's steps. Instagram videos, specifically, should start no later than three seconds into the video, provide value for the viewer, and keep them engaged (Newberry, 2021). The planter box video does this by using text to introduce the content of the video, as well as stop-motion animation of a tape measure. Aesthetic and stylistic considerations are also important when developing video marcomm. Videos should include clear and consistent visual branding components, both within a single video and, if applicable, across a campaign or series of videos. The company logo, colors, font(s), and/or slogans/catch phrases should be used creatively but uniformly (Zarzycki & Cyca, 2020). Both videos do well in this regard, with one minor exception: the fire safety video does not integrate a branded company logo at the beginning of the video. Including a logo at this point in the video serves to establish brand awareness at the outset, though, to those who are familiar with the company's aesthetic, the Home Depot brand is evident by the distinct orange background with complementary white lettering.

A related and oft-overlooked component of video marcomm is metadata: the title, preview thumbnail, description, and keywords and hashtags. Specific metadata best practices vary according to the platform, depending on how different platforms function and how users interact on them. Facebook and Instagram users "passively" engage content via their feed, which is in large part determined by those platforms' algorithms. YouTube users, on the other hand, are usually more proactive in seeking out specific content via search. Despite the differences across platforms, however, there are some common metadata best practices. Instagram videos are strengthened by cross-promoting posts with hashtags, which the planter box video does not use. Video descriptions, too, should be front-loaded with clear and relevant keywords and hashtags, but they should "use natural language, not keyword salad" (Cooper, 2020, n. p.). Both videos could be improved in this area: their descriptions are clear and concise, and the fire safety video provides a link to the company's website to purchase products, but neither integrates hashtags for cross promotion. Video titles are especially important for search engine optimization (SEO). The fire safety video, for example, leaves the file extension name in its title (i.e., "Kidde Fire Safety.mp4"), which is an oversight by Home Depot's marketing team that demonstrates some lack of attention to detail. The planter box video likewise fumbles the metadata by not citing a specific brand in its title. Even with these issues, the fire safety video and the planter box video sit squarely within the marcomm presale video genre.

Tech Comm Postsale Videos

Table 3. Metadata for The Home Depot video "How to Troubleshoot your Ceiling Fan"

Video Title	Date Posted	Location	Length	Views
How to Troubleshoot your Ceiling Fan	August 26, 2020	YouTube	4:58	>144k

Table 4. Metadata for Lowe's Home Improvement video "How to Build a Dog House"

Video Title	Date Posted	Location	Length	Views
How to Build a Dog House	August 14, 2020	YouTube	10:31	>438k

The YouTube video titled "How to Troubleshoot your Ceiling Fan" (ceiling fan video) provides existing customers of Home Depot with an audiovisual resource for troubleshooting their Hampton Bay ceiling fan(s). Table 3 shows relevant metadata for the ceiling fan video. It is a part of Home Depot's "How-to" YouTube series; the primary audience is consumers who have already purchased a product and now require technical information about how to install, maintain, and/or repair it. The YouTube video titled "How to Build a Dog House" (dog house video) provides users with an instructional video reference for building a modern dog house. Table 4 shows relevant metadata for the dog house video. The approach between the two videos differs despite similar users and purposes.

The most apparent difference in the two videos is that the ceiling fan video is intended to be a standalone instructional document, as are most of the videos that Home Depot publishes. Home Depot provides additional information in the video description and links to print documents, but a user could certainly accomplish the video's tasks using only the video without ever opening those materials. The dog house video from Lowe's does not seem to be intended to function as a standalone document. Within the first 30 seconds of the video starting, the on-camera host specifically mentions that the user should not try to write down anything from the video; rather, he references the materials in the video's notes. In this case, the dog house video is intended to complement the print materials rather than function as an instructional document itself. Both videos share some common tech comm features, which we explicate below.

Some structural characteristics of both videos are common to other examples of postsale, tech comm content and engage in the closest thing we have to best practices for such content. Both videos were posted to the retailers' YouTube channels. Though YouTube increasingly hosts marcomm content, it typically serves more as an archive than does Facebook and Instagram. Both videos mimic printed instructional documents (Swarts, 2012) in many ways: the videos are long enough to provide detailed instruction (Pflugfelder, 2013); the videos' titles clearly indicate their instructional purposes (Markel & Selber, 2021) and express actions and objects (van der Meij and van der Meij, 2013); and both videos show human actors performing the tasks, showing action rather than implying it (Eriksson & Eriksson, 2019); and both videos include links that "layer" information for viewers (Farkas, 1999, p. 45). Beyond these similarities, the videos differ in the comprehensiveness of their instructional quality.

Whereas the dog house video foregoes most textual graphics in the video and is intended to accompany the print instructions, the ceiling fan video serves as a standalone document. The video is introduced with an animation (van der Meij & van der Meij, 2013) of Home Depot's logo and the words "How-to Series." The video displays graphical steps throughout, and integrates signal words to provide users essential, additional information (Markel & Selber, 2021). Though both videos engage many best practices in terms of producing tech comm content, they also fall short in areas of usability and accessibility. The goal of any instructional document, including videos, is usability (Alexander, 2013). The videos lack two key usability and accessibility features. Neither the ceiling fan video, nor the dog house video provides captions for the voice-over narration or the host's dialogue throughout the videos, creating accessibility issues for viewers with hearing differences. Neither video includes onscreen text or graphics for the steps within each task, creating usability issues. Additionally, the dog house video produced by Lowe's is intended to be cross referenced with additional print materials, which could create further usability issues for a user working with only a single device and flipping between the video and instructions. At the end of the video, below the embedded links, the dog house video even includes a lengthy disclaimer stating that the video is intended for informational purposes only and assumes no responsibility for inaccuracies. Despite issues with accessibility and usability—a common problem in video content—the ceiling fan video and dog house video represent traditional postsale tech comm content.

Convergent Videos

Table 5. Metadata for The Home Depot video "TV Wall Mount Installation: A DIY Digital Workshop" posted to YouTube and Facebook

Video Title	Date Posted	Location	Length	Views
TV Wall Mount Installation: A DIY Digital Workshop (YouTube)	June 12, 2017	YouTube	1:02	>106k
TV Wall Mount Installation: A DIY Digital Workshop (Facebook)	October 18, 2018	Facebook		>16k

Table 6. Metadata for Lowe's Home Improvement video "9 Easy Yard Clean-Up Tips for Fall" posted to YouTube

Video Title	Date Posted	Location	Length	Views
9 Easy Yard Clean-Up Tips for Fall	August 26, 2020	YouTube	2:54	>82k

In this section, we analyze two videos that fit the convergent genre. The video titled "TV Wall Mount Installation: A DIY Digital Workshop" (TV wall mount video) is posted to both Facebook and YouTube by Home Depot and purposefully integrates components from both traditional genres in ways that evidence a convergent genre. The YouTube video titled "9 Easy Yard Clean-Up Tips for Fall" (yard clean-up video) implements conventions that are typical of both marcomm and tech comm. Tables 5 and 6 show relevant metadata for the TV wall mount video and the yard clean-up video. One traditional distinction between tech comm and marcomm videos is that the former typically revolve around an action or task, whereas the latter primarily function to highlight a specific brand or product. These two videos straddle both genres by demonstrating specific tasks while clearly presenting the brands/products used (all available at Home Depot and Lowe's), but without making the brands/products the focus of the video.

The two genres' convergence includes the videos' aesthetics. The TV wall mount video is branded extensively: the background music is the same that is used in most of Home Depot's marcomm videos, the "pegboard" in the background at the beginning and the end of the video is clearly Home Depot orange, the video is identified as part of the "DIY Digital Workshops" series, and the company's logo is watermarked in the bottom-right corner of the video. The in-video title card signals the video's instructional purpose using the words "how to": "How to Mount a Flat Screen TV." The background then displays a wall-mounted, flatscreen TV in a living room with the words "How to Mount a Flat Screen TV" in bold, white text. The yard clean-up video, too, employs a design style that foregrounds the company brand, though it is not as pronounced as that found in the TV wall mount video. It does begin and end with the Lowe's logo—and a small logo is watermarked in the bottom-right corner throughout the video (not easily visible on mobile)—but there are no additional textual, graphic, or audio cues in the video that indicate it is a Lowe's production. The video does, however, show a five-gallon, branded bucket from Lowe's frequently and for sustained periods, an obvious brand cue.

Effective technical documentation provides users with a list of requisite tools and conditions. The TV wall mount video shows a wooden tabletop overlaid with images of the required tools and the text "What You Need to Get Started." The yard clean-up video provides only a voice-over narration that states the tools needed for each of its nine tips. As with the postsale video analyzed above, the yard clean-up video appears to rely on the user viewing additional materials beyond the video to successfully accomplish the tasks. In this instance, the video description includes a list of links to all the items used in the video, a marketing-laced list of materials. Instead of listing generic names, both videos display specific brands of the tools that can be bought at the retailers' stores. At the beginning of the TV wall mount video, for instance, viewers are prompted to select either a regular or swivel mount, and the video employs a graphic animation and audio "ding" to encourage the latter. Likewise, in the yard clean-up video, one of the items displayed and given much screen time is a branded bucket made and sold by Lowe's. The narrator describes the multiple uses for the bucket—to hold weeds, and to store utility belts and tools in the offseason—while prominently displaying the Lowe's logo and name on the bucket, which is itself the trademarked blue color of the company. In both cases, these materials segments, a traditional tech comm feature of instructional sets, are, thus, used as in-video "up-sells."

The TV wall mount video demonstrates nine ordered but unnumbered steps, with an optional step, to install a wall mount for a TV. In place of narration—likely to serve the muted Facebook video genre—the video uses human actors and text/graphics to demonstrate the tasks. Each step is displayed in white, bold font as the actors complete the actions. This initial text is accompanied by less-weighted text underneath that clarifies or adds to the main text. These statements serve several instructional purposes: feedback statements, notes, extended command descriptions, and warnings, though none is labeled clearly with a signal word. The video layers information by linking to an instructional document on Home Depot's website and to the various tools used throughout the video. The video signals clearly that the task is complete by displaying the text "Now You Know" and shows the male actor sitting on the couch to watch his newly mounted TV. The scene then transitions to the Home Depot logo on the orange pegboard. The yard clean-up video, as seen in the postsale video, again includes no on-screen graphics beyond the title screen. The video does not include steps or feedback statements. And,

unlike the TV wall mount video, the yard clean-up video is intended to be viewed with sound on as all the information is conveyed by the voice-over narration.

Although the videos adhere to tech comm genre conventions in the aforementioned ways, the videos also exemplify structural and organizational traits of typical marcomm content. Both videos are shorter than their postsale video counterparts and longer than their marcomm counterparts. The TV wall mount video is less than two minutes long, and the yard clean-up video is less than three minutes long, both of which are short enough to be effective as marcomm but long enough to include all relevant steps in completing the tasks; both videos convey clear, customer-focused messaging and include unique calls to action to purchase the products used in the videos while avoiding overtly sales-focused requests. There are also differences between the two videos in terms of marcomm best practices. The TV wall mount video, for example, adheres to the "silent movie" rule (there is no voiceover to narrate the steps), but the Lowe's one does not. The former is more akin to traditional marcomm content in this respect. The TV wall mount video is more mobile-friendly, too; it employs large text that is easily read on a smartphone screen. Since the yard clean-up video uses voiceover narration to describe the steps, and most marcomm content is consumed on mobile devices that mute audio, the video would be less effective in that role.

The TV wall mount video metadata on YouTube suggests marcomm purposes, as well, including hashtags (#TheHomeDepot, #HomeImprovement, and #DIY) for SEO purposes that drive user traffic to the video and company channel, as well as links to the various products' points of purchase (POP) shown in the tutorial. The same video's Facebook metadata needs work, though. There, for instance, the video description reads, "Learn how to wall mount your TV and clear your space of clutter with help from our DIY Digital Workshop." This text is a clear call to action, but there is no direct marcomm accompanying it, such as a link to products' POP. Since Home Depot's Facebook page is frequently used to market specific products, and the video itself includes direct references to specific brands, there is no reason the video description should not feature, link to, or at least mention them. Notably, the yard clean-up video does not use hashtags, which decreases its SEO effectiveness. While the SEO effectiveness is decreased in this scenario, in other ways, including utilizing a video description and links to external resources, it is strong. Though they mix the genre conventions in differing ways, both the TV wall mount video and the yard clean-up video purposefully combine conventions to address their audiences in convergent ways.

DISCUSSION

Convergent elements occur within the presale and postsale videos in this analysis. Research shows that good content teaches something new to the viewer. A recent study (An, 2018) notes that "61% of consumers surveyed want to *learn something* from the videos they see on social media" (para. 7, emphasis ours). Although both presale videos analyzed earlier seek to sell specific brand products, and they both adhere to most marcomm best practices, each includes an instructional element. Collins and Conley (2020) cite "educational/how-to" videos as one subtype of social media marcomm. For example, the fire safety video outlines steps for installing and maintaining Kidde fire alarms, but the steps are neither numbered nor clearly sequential. And in the planter box video, some of the steps are not fully demonstrated, and others are omitted altogether. In both cases, as marcomm content, the purpose of these videos is not to provide detailed technical instruction for how to complete a task or project; instead, they deploy technical instruction to encourage new purchases. Indeed, some of the individual tech comm components are used to make marcomm calls to action. For example, one of the steps from the fire safety presale video is to "install an alarm in every bedroom [and] on every level." This imperative statement is instructional and directs users to consider additional purchases.

Likewise, both postsale videos are intended to function as tech comm content but also include branding elements that indicate genre convergence. The ceiling fan video overtly markets related products throughout the video, such as a "Tip" (2:43) to "Check the fan's product page" on Home Depot's website for more details on replacement parts. The video also recommends that users "buy an inexpensive balancing kit" (2:03-2:07) if the fan did not already come with one. The dog house video eschews overt marketing for more subtle hints, such as displaying the

Kobalt-branded saw when first beginning the project (0:30). The videos' respective YouTube metadata contain explicit marcomm content. Home Depot's videos employ three hashtags (#TheHomeDepot, #HomeImprovement, and #DIY) for SEO that is intended to drive user traffic to the video and the brand's channel. The description of the video produced by Lowe's includes links to all five of the company's social media channels, as well as an additional link to the company's YouTube channel. The description also links to the requisite print instructions for the doghouse. Both videos include persuasive descriptions intended to elicit viewers' attention. The ceiling fan video description states the following:

> "When it's warm outside, ceiling fans help keep your home comfortable by circulating the air indoors. Depending on the style you choose, they can also help you save money on cooling bills while adding an element of decor to any room."

Using a similar style and tone, the description for the dog house video states the following:

> "Building an outdoor house for your dog will help keep them protected from the elements and give them shelter from the heat and the cold. Learn how to build a dog house that is sturdy, attractive, and modern, along with a few upgrades that will ensure that all the neighbor dogs will be jealous of your pup's new home."

Such language is of course meant to convince viewers to think about the heat of the summer and purchase fans or think of their furry best friend's housing needs.

One purpose of this article has been to clearly delineate the practices found in traditional marcomm presale videos and tech comm instructional videos. Laying out these practices in clear terms then makes it easier to see how convergent videos are a unique genre in their own right, albeit one that melds the other two together in new ways. The analysis above yields several practices among the convergent videos we analyzed that technical communicators might find useful in B2C contexts. Prior to analyzing the videos and based on our initial research, we identified a general list of convergent characteristics. After analyzing the videos, we expanded and specified our list of convergent content. In Table 7, we present this refined list of convergent content characteristics and compare them to the typical genre conventions of presale marcomm videos and postsale tech comm videos.

Table 7, for the sake of clarity, attempts to collect and state genre conventions for readers. We acknowledge that content, whether presale, postsale, or convergent, will not always follow these rules strictly. As we discuss extensively in this section, the very videos we have analyzed incorporate elements of each genre. Ultimately, the rhetorical situation—audience, purpose, context, among other factors—must guide the communicator in implementing genre strategies.

The following four subsections describe specific convergent strategies used in videos we analyze in this case study. These strategies, discussed in relation to genre practices and considered alongside the characteristics identified in the table, may help technical communicators strategically produce convergent content.

Using Technical Tasks as Marketing Opportunities

Whether listing required tools or materials, demonstrating specific tasks or functions, or even providing feedback statements, convergent content intentionally exploits the user's attention to make implicit and indirect marcomm calls to action. The convergent videos we analyzed both take these opportunities in several instances, especially in materials lists. The TV wall mount video displays two different wall mounts but highlights the feature-heavy, more expensive version with an animation and audio ding to encourage the user to buy that mount. Likewise, the yard clean-up video prominently displays the Lowe's-branded bucket for most of the tips, encouraging the user to purchase the bucket and asserting brand awareness. The strategy of combining brief instructional content with prominent product and brand marketing is, according to Urbina (2017), "one of the highest effort-to-return ratios on offer in today's enterprises" (4). Pflugfelder (2013) has noted that quick start guide videos fulfill similar purposes. Technical communicators can adopt an approach that offers insights into a task or process while ensuring product brands play prominent roles in the process. Doing so prompts users to choose certain products for the task and could lead to content that achieves a higher effort-to-return ratio.

Table 7. Comparing conventions of traditional presale and postsale content with convergent content

Conventions	Presale	Postsale	Convergence
Purpose	Calls to action for purchasing decision directly or indirectly	Demonstrates specific task or procedure clearly	Demonstrates task that incorporates branded products; calls to action for purchasing decision indirectly
Audience	Targets general, uninterested audience with potential to engage	Targets customers who have already purchased a product	Targets interested audience actively seeking product/project or following company's social media
Platform	Publishes to social media; presents passive experience	Publishes to video-hosting platform; presents active experience	Publishes to social media or video-hosting platform
Marketing content	Foregrounds branded content highlighting specific product, service, or company	None; possibly presents non-strategic use of branded product	Foregrounds branded products being used
Instructional content	None; possibly presents non-strategic use of instructional content	Demonstrates entire task or procedure entirely; requires no additional materials	Shows task but does not necessarily identify all steps; is complementary to more complete guides
Production	Uses "silent movie rule"; integrates music, text, or graphical call to action; presents early branded hook	Demonstrates task with professional host; produces dynamic videos incorporating voiceover/speaking, music, text, and graphics	Shows "every person" completing task; incorporates jump cuts; highlights branded products
Length	<1:30	>3:00	1:30–3:00
Metadata	Links to products and point of sale; uses hashtags	Links to textual instructions or other related tutorials	Links to products and postsale content

Balancing Corporate Branding with Mundane User Ethos

Convergent content delivers clear corporate branding and polished presentation but adopts an aesthetic that forwards an ethos of the mundane user experience. The aesthetics of the videos we analyzed for this case study vary. The TV wall mount video is still overtly branded as a DIY video with graphics and animations, and the aesthetic is very much a traditional instructional document. The yard clean-up video, however, eschews the overt instructional practices and adopts instead a minimalist approach of showing a single user working in a yard without textual overlays and animations. While both videos contain easily recognized corporate branding, whether overt as in the TV wall mount video or subtle as in the yard clean-up video, they emphasize mundane users performing the tasks rather than professionals or experts. Emphasizing the mundane user draws on what many users find appealing from social media influencers, specifically a camaraderie and genuineness with the fellow mundane user. Johnson (1998) explicated a rhetorical approach to user-centered technology, calling attention to the everyday individual as expert of the mundane. Chong's (2018) study of YouTube beauty tutorials finds that often these user-generated channels do not follow best practices for, say, instructional videos, and subverting those professional best practices may in fact be an asset to creators in generating goodwill with their audiences and lead to more views and engagement. Likewise, in a content analysis of hundreds of science communication videos, Welbourne and Grant (2016) find that the YouTube channels of amateur producers are far more popular than professional ones because of three factors: user-generated videos are not overtly professionalized, user-generated videos maintain a consistent host over the course of videos with whom the audience identifies, and user-generated videos are published more frequently. Technical communicators can advocate for a better balance of subtle branding with more attention given to the mundane user to avoid "glossy but vacuous marketing content" (Samuels and Aschwanden, 2017, p.3).

Layering Content Pathways Across the Interface

Convergent videos provide multiple occasions—within the video itself and its metadata—for users to connect

with the brand and technical information. Both convergent videos we analyzed use linked content to expand the context of the task and product. The TV wall mount video, in keeping with the overt branding Home Depot's content uses, links within the video itself—the user clicks areas on the video display—to the company's product pages and other tutorials. The yard clean-up video, in maintaining minimalist interference in the video itself, instead uses metadata in the video description to take users to the Lowe's tutorial libraries. Urbina (2017) argues that content strategy addresses points of synergy between the user and the brand. Further, removing technical hurdles in delivering this content increases efficiency (Urbina, 2017). Technical communicators can take advantage of this convergent practice by ensuring compelling content pathways are available on the given social media platform. In some instances, this practice will require in-video links whereas other platforms may necessitate captions or descriptions. Beyond the video itself, communicators should provide documentation that expands the task, process, or product information that users seek through these content pathways. These pathways contribute to the user experience, an experience that, according to Samuels and Aschwanden (2017), should be seamless and coherent at each point of the customer lifecycle, including both presale and postsale.

Capturing Attention with Relevance

The convergent videos we analyzed are long enough to demonstrate the entirety of a task and brief enough to hold attention on their given platform. These videos use the instructional genre in a format that allows social media users to consume the content in an acceptable amount of time. The videos demonstrate tasks, either partially or fully, in bite-sized chunks, thus delivering value for a minor cost in attention. The videos, then, are neither cumbersome in length nor bothersome in presentation; rather, they are relevant to user needs. Urbina (2017) argues that "relevance is the key: When marcomm and tech comm are aligned on personas, customer journeys and content categories, relevant marketing calls-to-action inside tech content become paths to mutual benefit for brand and customer" (14).

Though some technical communicators might initially dislike the idea of incorporating marketing elements into instructional content, convergent practices align with recent claims in tech comm and content strategy. "Decades of discussion in technical communication," Clark (2016) says, "have suggested the need for communicators to better connect their work with the business goals of the enterprises for which they work" (p. 7). In Table 7 above, we identify convergent genre practices according to our readings of scholarship and industry publications that may help practitioners create content that aligns with those business goals.

CONCLUSION

One purpose of this case study has been to explicate the traditional genre conventions of presale marcomm social media videos and the traditional genre conventions of postsale tech comm social media videos. Our analysis of these types of videos demonstrates the ways in which two large brands use traditional genre conventions to engage customers across the product lifecycle. The relative lengths of the videos, use of onscreen graphics and animations, and reliance on metadata among other practices differentiate these two genres. Presale marcomm social media videos, such as the fire safety video and the planter box video, market specific products in brief, overtly branded productions. Though both videos include instructional content, they are not meant to guide users through tasks and cannot be used to do so. Postsale tech comm videos, such as the ceiling fan and dog house videos, instruct users how to accomplish useful tasks. Though both videos include marketed products and sales content, they are used as standalone instructional documents. Additionally, all four videos' purposes are reinforced by their delivery platforms, with the shorter presale videos appearing on Facebook and Instagram and the longer postsale videos published to YouTube. Our analysis shows the traditional genre conventions at work in these videos.

Our other purpose in this case study has been to provide technical communicators examples of how convergent practices—first discussed in Adobe's white papers (Urbina, 2017, and Samuels and Aschwanden, 2017)—meld traditional genre conventions of presale marcomm and postsale tech comm content. Our case study of the TV wall mount video and yard clean-up video shows four prominent ways that these genres converge: using technical tasks as marketing opportunities, balancing corporate branding with mundane user ethos, layering content pathways across

the interface, and capturing attention with relevance. Each of these convergent practices balances elements of traditional genre conventions and best practices of presale and postsale content. With our initial analysis in this case study, we believe that convergence moves beyond haphazard remixing of a given genre and might constitute a new genre, one that purposefully considers its user at each point of the content lifecycle and attempts to meet those varied needs in a single video. That said, more research is needed to see how convergence is deployed currently across industries.

There are limitations with this case study that prevent us from making generalizable claims about convergence. The biggest limitation is the sample size. Though we considered several videos, our goal was not to codify convergence; rather, we have attempted to define convergence for practitioners of technical communication, provide a couple of clear examples, and begin a discussion of convergent video practices. Additionally, our small sample comes from a single industry, representing only two large brands. Given the significant contribution of influencers to social media spaces, our study is also limited by not addressing the tactics of user-generated content and sponsored content. These limitations lay the foundation for future studies.

Subsequent studies could systematically select and code more videos from single or multiple industries to compare the frequency of presale, postsale, and convergent videos and note trends in their practices. Mitchell and Strubberg (2022) recently shared initial research that coded over 500 social media videos published during the COVID-19 pandemic to study how they used these genres. Though preliminary, the data shows convergence applied purposefully, especially in campaigns related to corporate-social responsibility. This interesting finding warrants further investigation.

An interesting thread that is beyond the scope of this case study is the relationship between marcomm, tech comm, and user-generated content (UGC). Although much tech comm research in video has focused on content created by institutions for users—including ours—the influence of UGC and Kimball's notion of tactical technical communication (TTC) (2006, 2017a, & 2017b) is palpable. Whereas institutions' tech comm is mostly strategic—with a focus on achieving high-level organizational goals—individuals' tactical tech comm is grounded in end-users' actual experiences with products (Kimball, 2017). Additionally, social media 'influencers' with large followings, for example, are now paid by companies to use products in their videos, which include sundry tech comm, such as product tutorials, reviews, and DIY projects. Many users have built large, devoted followings—often orders of magnitude larger than name brands—that trust the user, or influencer, more than the manufacturers of the products they use. To that end, convergent videos have grown out of the landscape of tactical user-generated video content and should be considered and fully studied by the field.

Convergence as a genre represents a brand's attempt to target modern video users and consumers who have grown up in a digital age of social media and content marketing. These viewers are too savvy to buy into overtly sales-focused marketing videos but lack the attention span to sit through lengthy product descriptions. Though this study cannot offer sweeping declarations about this new, emergent genre, we hope it will offer technical communicators insights into convergent practices and foster discourse on the subject.

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Strategy of Technical Content Marketing in an Entrepreneurial Tech Company: Using the Funnel-Bucket Model to Guide the Message and Media

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By Scott A. Mogull

ABSTRACT

Purpose: In this article, the content strategy for technical content marketing (TCM) is examined for a start-up tech company, Terra Solar, commercializing a "do-it-yourself" (DIY) home solar power kit that makes clean energy more affordable and accessible to a wider range of consumers. Notably, this article illustrates the role of technical communication in technical content marketing using the funnel-bucket model, a framework for implementing content strategy for new products, to inform the communication goals of an entrepreneurial technology company and provides a framework for implementing content marketing publication strategy for new technical products.

Method: This case study integrates theory, research, and industry practices of content strategy, technical content marketing, advertising, digital marketing, and technical communication.

Results: This article situates strategic marketing plans with the theory of content strategy and includes a review of the latest research in content marketing to provide readers with a research-based guide for planning the commercialization strategy for technology products.

Conclusion: This case study describes the use of the funnel-bucket model as a framework for planning TCM genres to provide a coordinated set of informative and persuasive product-related information through multiple media platforms to reach target technical buyers.

Keywords: Content Strategy, Technical Content Marketing, Funnel-Bucket Model

Practitioner's Takeaway

- Shows the use of the funnel-bucket model for technical content marketing to model the content strategy of a technology company.
- Provides a framework for planning and publishing content marketing for new technical products

Strategy of Technical Content Marketing

This case study examines the content strategy of marketing communications (marcom) for a start-up tech company developing a "do-it-yourself" (DIY) home solar power assembly kit that is more affordable and accessible to a wider range of consumers. Balancing informative and promotional objectives, technical content marketing (TCM) genres are planned and published strategically to provide potential customers—and intentionally repeat customers—with relevant and useful information about a technical product or service as these individual audience members progress through their personal customer journey that includes collecting information about a technology category and a specific product, selecting and purchasing of one product from a competitive market, and ultimate progression to a brand-loyal evangelical for a specific product and tech company (Geier, 2015; Mogull, 2021; Pulizzi, 2014).

The content strategy of TCM is based on the classical AIDA (Attention, Interest, Desire, and Action) model for marketing communications, which has been updated after the point of purchase to include communications that promote technical consumer loyalty (Geier, 2015; Strong, 1925). With this framework, TCM requires continuous, multiphase evolution of messaging and media to reach different target audiences as technology evolves the innovation life cycle (Mogull, 2021). Notably, effective TCM is more than the aggregate of marketing genres with similar messaging communicated through various media. Rather, a successful content strategy for tech companies is to become, in essence, a "multimedia publisher" that coordinates useful information, genres, and media channels to target awareness and education to specific buyer personas and thus create a genre-constructed demand for a company's products or services (Pulizzi, 2014; Revella, 2015).

In this case study, the content strategy is examined for a start-up tech company, Terra Solar, in the year leading up to the product launch as the marketing plan for TCM is developed for the company's first product—the Solar Canopy. Based in the Texas State University Science, Technology, and Advanced Research (STAR) Park, Terra Solar implemented the latest research-informed marcom strategy to develop its marketing plan. In this case study of the marketing plan for the Solar Canopy, the following two research questions were explored:

1. What genres and media are used to communicate a new technical product to potential buyers (innovators and early adopters) at the time of initial product launch?
2. What is the content (or message) of each communication and how does that message contribute to the larger network, or communication strategy, about the product?

This article provides a model-based marketing plan for tech companies to use as a TCM publication calendar in the selection of genres, media, and messages—which establishes the groundwork for a marketing publications department.

TECHNICAL CONTENT MARKETING THEORY

Technical content marketing (TCM) is the collection of all communications about a technical product (or service) with the goal to provide relevant, useful, coordinated, and consistent information to target buyers through various media and interpersonal sources (Ames, 2017; Mogull, 2021; Pulizzi, 2014). Content marketing is a network of interconnected genres with various messaging that discourages a "hard sell" overtly promoting a product, but rather attracts an audience for each genre based on the merit of the information relevance or entertainment value of each communication (Pulizzi, 2014; Wall & Spinuzzi, 2018). In a content marketing publications ecosystem, audiences are provided an array of informative and reliable content about a technology category so that the company, the brand, creates a reputation for being a reliable source of information within a technology market space. In theory, this brand credibility transfers ethos to the product itself so that TCM audiences eventually become product consumers (Pulizzi, 2014).

CONTENT STRATEGY

Content strategy is the unified planning and distribution of all communications that supports the organization's business plan (Clark, 2016; Getto et al., 2019a; 2019b; Harner & Zimmerman, 2002; Redish, 2012; Rockley & Cooper, 2012). Notably, content strategy connects communications among departments in a siloed organization to communicate a consistent message and voice from the organization (Getto et al., 2019b). In practice, the content strategy

of organizations includes the planning, writing, and publishing of all external communications through various multimedia channels to provide relevant and consistent messaging to a variety of audiences to sustain the organization (Flanagan & Getto, 2017). For example, nonprofit organizations require a robust multimedia presence that delivers various genres to serve relevant and distinct audiences (such as volunteers, donors, and clients) to enable the organization's overall objectives (Flanagan & Getto, 2017; Getto et al., 2019b). More specifically, commercial organizations typically develop a written content strategy, or marcom plan, that includes all decisions of communications (Pulizzi, 2014). The elements of content strategy include (Batova & Andersen, 2016):

1. Substance: Message, genre, and media,
2. Structure: Format and metadata,
3. Workflow: Tools and practices to create, maintain, and retire content, and
4. Governance: Evaluation that content meets the strategic intention of the business plan.
5. Collectively, these elements dictate the UX of all communications to rhetorically motivate target audiences towards specific outcomes that achieve the organization's objective (Andersen, 2014; Dolezal, 2019; Getto, 2019; Hovde, 2019; McDaniel, 2008). Subsequently, content strategy provides direction to the seemingly copious number of communications created and published by organizations.

CONTENT STRATEGY OF TECHNICAL CONTENT MARKETING

TCM encompasses all forms of brand communication and rhetorical strategy by organizations. Marketing strategy is organized into the 4Ps (Keller, 2003), which include:

- Product: the appearance of the product, features of technology, and user experience (UX),
- Promotion: advertising and marketing genres for the product, which includes the overall content strategy,
- Price: the value of the technology to the target consumer, and
- Place: channel of distribution or marketplace.

Collectively, the 4Ps contribute to the rhetorical construction of a brand image in the mind of consumers. This image, the "brand," is the singular message that an organization, technical product, or service represents and connotatively influences the audiences' judgments and feelings to construct personal resonance and promote engagement, attachment, loyalty, and community among consumers or other groups associated with the brand (Keller, 2003).

Strategically, brands are developed by organizations. All factors and combinations of factors including product design, technology UX, TCM or promotion, and interactions with other individuals reference the brand to create the brand image and differentiate it along some dimension (for example, quality, value, or social impact) from the competition (Keller, 2003). Brand image and value are established rhetorically through *logos*, *pathos*, *ethos*, or some combination of these classical Aristotelian modes of persuasion (Hardesty, 2009; Mogull, 2018a). For ethical promotion or content strategy of TCM, this means delivering reliable, clear, and accessible information through a variety of media that serve multiple audiences' needs for information along each stage of their journey through the awareness, information gathering, alternative selection, and support phases (Mogull, 2022). Often for technology, the credibility of a brand is based on the quality of the argument, with *logos* as the pinnacle, followed by *pathos*, and least from *ethos* (Mogull, 2018a). Furthermore, ethical TCM of product claims for a typical user and undistorted information about the technology are essential (Mogull, 2022; Mogull, 2018b). TCM is a category of technical communication that is designed to strategically develop and shape a product market by converting audiences to technology users. Particularly in the case of complex, expensive, or unfamiliar technology, the strategy is the promotion of the general technology platform to solve a consumer need, such as the benefits of home solar power, with limited product-specific marketing genres such as the Solar Canopy webpage. However, the content or focus of TCM is selected to reflect the specific benefits or applications of a particular product for which the company has a customer niche or user advantage to rhetorically develop the conversation about certain needs or wants over others. This reverse selling strategy—to promote the product category before the product itself—is seen in the construction and communication through

technology and media channels that enable readers to navigate freely and, more specifically, consume, leave, and then return to various genres within the company-constructed information ecosystem (Wall & Spinuzzi, 2018). Holistically, the delivery of useful technical information constructs the brand's ethos by satisfying the audience's need for information as well as their user expectations for on-demand, customized, portable content for information access anytime and anywhere (Anderson, 2014). In essence, purposeful and reliable content delivery of TCM is the first step in establishing consumer knowledge and brand trust for future purchases of an innovative technical product or service.

The marketing and sales funnel-bucket model provides a framework for planning the content strategy of a tech company and, more specifically, publishing different technical content marketing genres at various stages of the technology customer decision journey (Ames, 2017; Batra & Keller, 2016; Dolezal, 2019; Geier, 2015). Historically, the marketing and sales funnel, or AIDA (Attention-Interest-Desire-Action) model, was originally developed for advertising to consumers who progress from lack of awareness about product availability to eventual purchase—as long as the messaging and product fit are appropriate for the target audience (Strong, 1925). In the marketing and sales funnel (Figure 1), consumers progress through the following stages, which are useful for constructing the messages of various genres:

1. Attention: Gain initial awareness of a new product,
2. Interest: Develop interest and increase knowledge about a product,
3. Desire: Create a feeling of want to own or use a product, and
4. Action: Supplement the actions necessary to purchase a product.

As represented by a funnel, each stage narrows the size of the audience that will ultimately progress to the "action" stage of product purchase. Thus, TCM content strategy requires reaching a target audience through media channels with appropriate messaging of technology or product benefits that engages the audience and encourages them to follow a somewhat anticipated path to the next stage of the customer decision journey in which the TCM provide additional informative and persuasive content leading to the next stage (Ames, 2017; Batra & Keller, 2016; Dolezal, 2019; Geier, 2015).

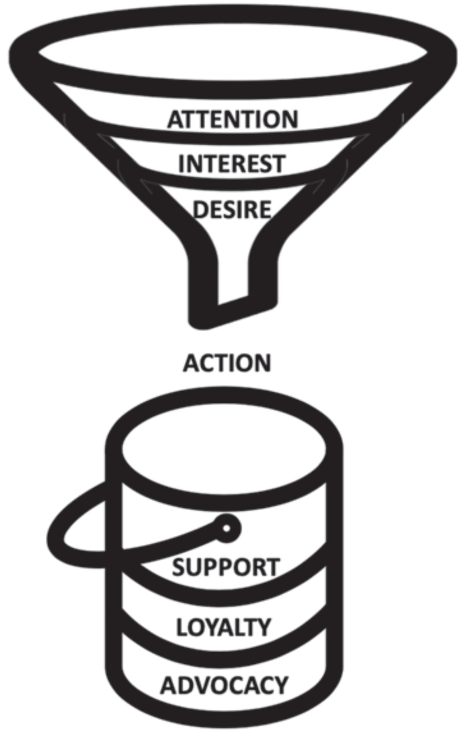

Figure 1. The funnel-bucket model guides the content strategy for technical content marketing genres, messages, and media through the customer journey for a new product.

In terms of TCM, these stages are rarely accomplished through a single interaction with only one genre. Rather, a coordinated ecosystem of TCM genres including websites, social media, press releases, and consumer feedback, help construct audience perception and ultimate purchase of a product or service (Batra & Keller, 2016; Dolezal, 2019; Geier, 2015; Wall & Spinuzzi, 2018). Furthermore, comprehensive content strategy of tech companies develops lifelong consumer relationships that continue after product purchase at the action stage. In addition to customer support materials (instructions and FAQs), companies also pursue a positive long-term relationship with customers that are developed through TCM strategies to generate company or product loyalty and, ideally, advocacy of a brand (Dolezal, 2019; Geier, 2015). These post-sales genres of TCM, which are part of a content strategy, are represented as a bucket beneath the funnel (Figure 1) to reflect the importance accumulating customers and nurturing these relationships so they become engaged, loyal users of a technology and, ideally, brand evangelists who promote the technology through product use

and "word-of-mouth" online customer reviews (such as blog and social media posts) that amplify product awareness and information. Thus, both acquisition of new customers and retention of existing customers, particularly in markets with multiple product options, are the primary goals of TCM genres throughout the marketing and sales funnel-bucket model (Gordon, McKeage, & Fox, 1998; You & Joshi, 2020).

CONTENT STRATEGY OF THE FUNNEL-BUCKET MODEL IN A STARTUP TECH COMPANY

In the following examination of the start-up tech company Terra Solar, content strategy provides product awareness and delivering technical information through typified genres and media (Mogull, 2019; Mogull, 2021). In this analysis of Terra Solar, the implementation and analysis of a content strategy for the content marketing of entrepreneurial technology is traced as the start-up tech company transitions from the funding and prototype stage to the commercialization stage for the Solar Canopy, a "do-it-yourself" (DIY) assembly kit for affordable and accessible consumer solar power. More specifically, when communicating a new technology to a potential consumer market, the content strategy of the start-up tech company transitioned from seeking investors in the technology and company to marketing the Solar Canopy to potential consumers. The content strategy for commercialization of technology, the TCM content strategy, becomes an online network of coordinated marketing communications about the Solar Canopy and consumer solar energy for target audiences. For this strategy, technical content marketing genres were designed to provide educational, informative, and persuasive content at various stages along a multi-step process of developing product awareness, communicating technical information, selecting the company's product from similar technologies, and ultimately purchase of the technology (Geier, 2015; Pulizzi, 2014; Wall & Spinuzzi, 2018).

Batra & Keller's (2016) Communications Optimization Model (7Cs) was used to develop the TCM content strategy of Terra Solar's Solar Canopy to maximize audience reach and contribution of the typified message of each genre, while accounting for cost (or limited expense), for a start-up tech company with a limited marketing budget. According to Pullizzi (2011), the objectives of a content marketing strategy include:

1. Brand awareness or reinforcement,
2. Lead conversion and nurturing,
3. Customer conversion,
4. Customer service,
5. Customer upsell, and
6. Passionate subscribers.

As part of the TCM content strategy, the conformability, or the unique information journey of individuals through a genre network, was designed to place product-centric genres at the center of a broader genre ecosystem promoting the market for a scalable, DIY-assembly kit for consumer solar power by providing content to reach target technical buyers. Within Terra Solar, the marketing department becomes a publications department (Pulizzi, 2014; Samson, 1988). The genre categories for Terra Solar's TCM content strategy are as follows (Batra & Keller, 2016; Dolezal, 2019; Geier, 2015):

1. TCM communications hub (website),
2. Company-owned TCM publishing media (company-written TCM blog & direct mail/email),
3. Paid media for internal website traffic (online search/display ads), and
4. Earned media for internal website traffic and an external online network (company-owned social media microblogs, external social media microblogs, external blogs, press coverage, and organizational partnerships).

In the following section, each genre category and strategic outcome are discussed in greater detail.

TCM Communications Hub

Fundamentally, Terra Solar developed an online presence for the company through a company website with the goal of persuading potential technology customers to purchase the Solar Canopy through detailed information. Approximately one month prior to the product launch, Terra Solar launched a preliminary Web presence of TCM. The primary communication outcomes of a TCM website are to convey detailed information promoting the technical product and to connect potential buyers with the company staff and other brand enthusiasts such as earned-media outlets (journal and organization

news releases and outside bloggers reporting on the technology or market) or satisfied customers (consumer social media accounts) to leverage interpersonal sources and social forms of TCM (Bass, 1969; Batra & Keller, 2016; Geier, 2015; Mahajan et al., 1990; Mogull, 2018a; Mogull 2021; Mohr et al., 2010).

The technology brand website served as the hub of the technical content marketing ecosystem about the consumer-solar panel/off-grid ecosystem by funneling visitors (or potential customers) from online advertising, direct mail/email, and social media blogs (Geier, 2015). Specifically, the website becomes a valuable information resource with embedded search-engine optimization (SEO) strategies to attract targeted visitors, provides detailed technical product information about the Solar Canopy that supports the product positioning statement, and is organized with the supporting benefits and features (Hardesty, 2009; Harner & Zimmerman, 2002; Mogull, 2018; Teague, 1995). As stated by Batra and Keller (2016), conveying detailed information focuses on "persuading consumers about brand performance [and] requires that they appreciate the benefits of the products or services and understand why the brand can better deliver those benefits in terms of supporting product attributes, features, or characteristics" (p. 131). The pre-launch website also allows visitors to take immediate action by providing (1) company contact information for immediate support from sales associates to begin exploring product solutions to a potential customer's personal needs and (2) an email address for future direct emails about the product. The post-launch website will be expanded to provide catalog and purchasing information/options, customer/technical support contact information, and product documentation as support forms of TCM (Wirtz-Brückner & Jakobs, 2018; Mogull, 2019).

The website also serves to expand awareness, create salience about the Solar Canopy, and elicit visitor emotion through persuasive and informative content (Geier, 2015; Batra & Keller, 2016). Holistically, the website develops and promotes a brand image through the quality and integrity of the communication (visual/verbal messages, media selections, and hyperlinking to news articles, press releases, and partnerships that notably include the Department of Energy American-Made Solar Prize, Texas State Ventures, EPIcenter Energy Incubator & Accelerator, and Tech Commercialization Center at the University of Texas at San Antonio SBDC) (Batra & Keller, 2016; Dolezal, 2019; Geier, 2015; Mogull, 2018a). Through the co-constructed knowledge and positive, credible external endorsements, Terra Solar seeds the foundations for technology brand ethos and loyalty by managing all points of online communication and promoting social/earned media connections (Geier, 2015; Batra & Keller, 2016). In the marketing and sales funnel-bucket model, Terra Solar's Solar Canopy website functions as the TCM communication hub, and integrates all stages of the ideal technical buyer journey with the brand (Dolezal, 2019).

Company-Owned TCM Publishing Media

A content marketing program prioritizes publishing engaging and useful content that meets the informational needs of its target customers rather than focusing simply on the product itself (Pulizzi, 2014). For the start-up technology company Terra Solar, the TCM publishing platforms included a company-written blog and direct mail (specifically email). Through company owned TCM publishing media, construction of the Terra Solar brand ethos and expanded awareness by public sharing of content is enhanced by publishing information that appeals to the following positive emotions (organized from highest to lowest effect): (1) practical value, (2) awe, (3) interest, or (4) surprise (Berger & Milkman, 2012). Notably, external audiences frequently share this online content for altruistic reasons (e.g., to help others) or for self-promotion (e.g., to appear as an informed, knowledgeable source) (Berger & Milkman, 2012).

Blog posts published on a website and then shared on social media is the most common form of content marketing and should be published on a regular basis in order to attract new and recurring website visitors with the goal of providing valuable content for the targeted audience. This will likely make readers more inclined to forward and share them on social platforms, as well as other online sites (Vinerean, 2017). Visual blog posts, or technical infographics, are also used to communicate statistics, facts, or data visually. Thus, they provide a more compelling and engaging format that can summarize and convey large sets of information (or data) in a clear and easy to interpret light (Vinerean, 2017). Initially, the TCM blog posts and technical infographics planned by Terra Solar were to promote the market of scalable DIY, off-grid consumer solar

power, and government incentives for investing in consumer solar power. Downstream following market launch, the TCM blog posts would be expanded to include customer case studies to share customer success stories that explain how the Solar Canopy helped a customer who represents a particular technical buyer persona (Vinerean, 2017). Company-written blog posts promote generic category demand for consumer solar power needs covered by Terra Solar and, as a credible source of information about the technical field, develop brand preference for Terra Solar (Batra & Keller, 2016). Blogs and other forms of social media create awareness and salience for a product or brand, convey brand imagery and personality, elicit emotions, and connect people to the brand (Batra & Keller, 2016). Specifically, social media as a category of interpersonal and social TCM influences the liking, loyalty, engagement, and advocacy of a technology and confers greater influence on brand selection than product-centric TCM (Batra & Keller, 2016; Mahajan et al., 1990).

Direct email (as a form of direct mail) functions to communicate directly to a list of previously collected addresses from prior website visitors and interpersonal connections to company representatives to convince them to take an action (Cheung, 2011; Hardesty, 2009). Many technical companies also purchase outside address lists from related organizations, although this strategy requires a large marketing budget so external email lists were not initially included in the TCM strategy. Initially, the first direct email was planned to announce the product launch, with subsequent and somewhat infrequent emails being used to announce new product availability. Specifically, the direct emails were an opportunity to reengage individuals who had former contact with the brand and would be potential consumers for purchasing the Solar Canopy when the product is launched. Notably, direct mail/email has the greatest impact on inspiring action and conveying detailed, benefit-focused information about a product or service (Batra & Keller, 2016). Direct mail/email also has a moderate influence on creating brand awareness and salience as well as instilling brand loyalty (Batra & Keller, 2016).

Paid Media for Internal Website Traffic

The “top of funnel” (Figure 1) goals awareness, interest, and desire have genres for online “findability” of websites and content marketing, which are planned to attract information-seeking online visitors through specific and targeted keyword advertising in online search engines and possibly expanding to online display ads on other websites (Batra & Keller, 2016; Dolezal, 2019; Geier, 2015; Morville, 2005). In general, prominent placement in online search engines through native search of keywords is unrealistic for the majority of companies, particularly start-up tech companies, and thus the majority of content providers rely on online advertising in search engines, social media platforms, and display ads to attract online visitors (Batra & Keller, 2016; Dolezal, 2019; Pan et al. 2007). Batra and Keller (2016) describe the objectives of these forms of media advertising as “messages that remind or trigger action [to visit a website offering a particular solution] rather than for messages that aim to persuade through detailed information” (p. 131). Thus, some investment into online advertisements is necessary to attract targeted online visitors to consume TCM. Search ads and display ads have the greatest influence on creating brand awareness and salience as well as medium to strong influence on inspiring action (Batra & Keller, 2016). Specifically, search ads and display ads funnel potential consumers through the stages of need recognition, awareness, examination of technical solutions, and learning about a product or service (Batra & Keller, 2016).

Earned Media for Internal Website Traffic and an External Online Network

Social media platforms for microblogging (external and company-owned), external social media microblogs and blogs (mentions, shares, reposts, and reviews), press coverage, and organizational partnerships create an external online network (or ecosystem) of partnering brands, functioning at both the top-of-funnel (awareness or “findability,” interest, and desire) and bottom-of-bucket (loyalty and advocacy) stages in the marketing and sales funnel-bucket model. Similar to paid media, these genres attract targeted, online visitors. However, unlike paid advertisements, earned media functions by providing positive interpersonal and social (word-of-mouth) endorsements (Batra & Keller, 2016; Mahajan et al., 1990). Both social media (company owned and external) and public-relations strategies are the strongest TCM strategies for constructing brand trust and eliciting emotions (Batra & Keller, 2016; Wood 2014). These communication networks that

connect users, partners, advocates, and news media function to engage individuals with a brand beyond a company's ecosystem and function to create brand awareness and salience as well as further developing a brand image (Batra & Keller, 2016; Lofstrom, 2010).

MARKETING COMMUNICATIONS PLAN FOR THE SOLAR CANOPY

While Terra Solar's overall goal is the sale of the Solar Canopy, the goal of publishing TCM is more than to announce or directly promote the product, but also to establish itself as the knowledgeable and trusted brand in the field of consumer solar power (Pulizzi, 2014; Wall & Spinuzzi, 2018). Metaphorically, content marketing publishing, as stated by Pulizzi (2014), is "like the job of museum curator...to unearth the best content on the planet in your niche so that your museum doesn't close for lack of attendance" (p. 80). In the case of San Antonio, Texas-based Terra Solar, the "museum" audience consists of consumers of content related to consumer solar power—particularly for the regional Texas and US-based markets being the initial geographical regions, with particular focus on audiences potentially interested in small to scalable, DIY solar power assembly kits for either stand-alone or rooftop mount. Notably, though many large technical companies have global markets, and this is often the goal of start-up tech companies, consumer tech products are typically launched in one region at a time with specific configurations and regulations (such as electric compatibility with US-based systems). Furthermore, the value and benefits of the technology are locally constructed (Cruz-Cardenas et al., 2019; Sun, 2012, 2013) so the marketing communications plan provides a localized Texas and US-centric content strategy for the initial product launch of the Solar Canopy.

A successful TCM content strategy, or marketing communications plan, is to publish specific genres through different media platforms with predominantly informational content that is needed or wanted by target audiences in a technical market. For Terra Solar, the goal of the TCM content strategy is to direct relevant and useful information to niche markets (e.g., solar power for scalable/entry-level homeowners, tiny homes, camping, or gardens). Each target audience represents part of the bowling alley strategy of Terra Solar to focus on the solar power product needs of a niche market and then promote solar power use within the market (Mogull, 2021). Similar to the strategy initially used by LinkedIn, this approach by Terra Solar focuses on serving the needs of a small, relatively similar technical audience that have been previously unaddressed by other companies. As a product and service, TCM with a content strategy designed to reach these target technical audiences serves as the first example of the quality and accessibility of product and service from the company. Notably, delivering content to target technical audiences that is more accessible and better tailored to the specific audience's desire and need for information significantly contributes to the construction of the ethos of Terra Solar (Smart et al., 1996).

The marketing communications plan for the Solar Canopy from one month prior to product launch through the first four months of product availability is provided in Table 1. In this pre- to post-launch marketing communications plan, relatively consistent post-launch product information is provided on the company website. However, the content strategy is to provide consistent publishing of relevant information through monthly blog posts (announced on social media microblogs), monthly infographics posted to social media microblogs, bimonthly coverage in the news media through targeted press releases, and occasional direct emails to reengage potential website visitors. Additionally, the content strategy includes monthly review of search ad effectiveness (and optimization), with the opportunity to incorporate display ads in the future as the marketing budget increases. As each specific target audience, or niche "bowling pen" customer segment (e.g., small/DIY off-grid solar power market) has their information needs met through TCM, Terra Solar shifted to focusing content for a different niche market. Overall, the strategy of addressing customer segment markets was to design TCM from the largest to smallest market opportunity (considering the company's position within the marketplace and geographical region). Ultimately, the TCM content strategy for these online genres leverages operational efficiency through information reuse, accessibility, navigation/interaction, immediacy, and marginal marketing cost (Koiso-Kanttila, 2004; Rowley, 2008). These foundational online content strategy outcomes should be later developed further to promote personalization, interactivity, and user agency (Valos et al., 2010).

Table 1. Monthly product marketing pre- to post-launch marketing communications plan for the Solar Canopy.
The content strategy for the marketing communications plan is designed to attract regular visitors to the company website. This goal is achieved by regularly publishing new content that is informative and useful to niche technical audiences through informative blog posts, social media microblog announcements and infographics, and press releases. In this marketing communications plan following product launch (in February 2022), the following three months are focused on reaching under-served, niche solar power consumers in tiny homes, camping, and small off-grid systems (including community projects). Furthermore, future blog posts and press coverage following these first three months would not only address other niche consumer audiences but reengage these prior audiences by incorporating customer case studies and community partnerships—both showing successful and interesting implementations of the Solar Canopy, which are then also announced through social media.

	PRELAUNCH	LAUNCH	POSTLAUNCH		
	Jan 2022	**Feb 2022**	**Mar 2022**	**Apr 2022**	**May 2022**
Website	Solar Canopy general information with email signup	Solar Canopy technical brochure information and catalog specifications with ordering information			
Search Ads		Keywords (Google and possibly Facebook); Optimize language and keyword selection monthly			
Display Ads		TBD (As marketing budget increases, decide if display ads fit into marketing plan)			
Direct Email		Solar Canopy product availability List: All emails from website signup			Government and local energy company incentives for consumer solar power List: All emails from website signup
Social Media Infographic (post to microblogs: Facebook, Twitter, & Instagram)		How to calculate the payback period for solar panels	Benefits of going solar in Texas	Solar power and camping	Community solar power & health
Blog (also announce and link from social media microblogs)	Reasons to convert to solar energy	Solar energy financial incentive, rebates, federal tax credit	Practical questions for a DIY solar project	Using solar energy for tiny homes	Grid-tied vs. off-grid solar systems
Press Releases (also announce and link from social media microblogs)		"Texas startup reveals affordable and modular solar power solution for homeowners" Target publication: *San Antonio Business Journal*		"Award-winning Texas start-up reimagines solar power." Target publication: *Community Impact San Antonio*	

CONCLUSION

This article examined the content strategy framework for technical content marketing (TCM) genres and media platforms of Terra Solar throughout the customer decision journey for the Solar Canopy. Using the marketing and sales funnel-bucket model as a guide for planning the genres and media platforms to inform and persuade potential customers, the marketing communications plan listed monthly tactics (or activities), which provides the publication timeline for TCM. Planning, writing, and delivering technical content marketing holistically based on a content strategy (rather than as individual, isolated genres) helps construct a coordinated technical buyer journey through the marketing and sales funnel-bucket model by:

- Establishing a clear and consistent perception of a product,
- Maximizing resources through effective content management that reuses core information and delivers target, niche audience-specific content through different media sources,
- Building a brand ethos and image that resonates with consumers, and
- Continually testing, optimizing, and publishing TCM as a "museum" of information on the market and product or technology.

As Baehr (2013) stated, "Effective content strategy is iterative and evolving; over time it is sustainable and closely linked to standards and practices that govern a body of knowledge" (p. 305).

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Comparing the Multimodality of Chinese and US Corporate Homepages: The Importance of Understanding Local Cultures

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ABSTRACT

Purpose: In this cross-cultural study, we investigated the similarities and differences in the multimodality of Chinese and U.S. corporate homepages.

Method: We collected the homepages of 35 Chinese and 35 U.S. companies' local websites. We developed a framework for annotating different types of multimodal elements presented on corporate homepages. Using both quantitative and qualitative methods, we compared the verbal-visual composition and arrangement on Chinese and U.S. homepages in terms of textual, pictorial, diagrammatic, and video elements.

Results: We found salient differences in the use of multimodal resources between Chinese and U.S. homepages. Chinese homepages overall made greater use of textual and video resources, with emphasis placed on directional textual elements and Flash animations and videos. They also tended to arrange multiple news titles in a list, employ parallelly placed pictures, and use more QR codes. In contrast, U.S. homepages preferred to present individual news headlines with news summaries attached, use one large background picture with subordinate elements embedded in them, and offer more social media icons for further connection.

Conclusion: The differentiated approaches to deploying multimodal resources between Chinese and U.S. corporate homepages were closely associated with the distinctive cultural orientations and communication styles between these two countries.

Keywords: Cross-cultural Differences, Multimodal Elements, Corporate Homepages, Online Communication, China versus the U.S.

Practitioner's Takeaway

- Provides an overview of how corporate webpages being used as a communicative medium allow co-deployment of different multimodal meaning-making resources that all have particular affordances. These multimodal elements are orchestrated to fulfill the intended communicative goals online.
- Shows that local cultures impose crucial influence on how multimodal elements are composed and arranged on corporate homepages. Chinese and U.S. corporate homepages show salient cross-cultural differences in their deployment of different types of multimodal resources.
- Suggests that corporate communication practitioners properly address cross-cultural differences in the deployment of multimodal elements on webpages. It is advisable to take adaptative or localizing strategies in designing website layout when communicating to an overseas audience.

Of various types of digital platforms, corporate websites are widely considered as one direct and effective delivery medium for corporate communication (Simões, Singh, & Perin, 2015). They are hybrid manifestations of multimodal communication that combines a variety of visual or auditory channels and modes other than merely verbal texts (Pauwels, 2012). Though it has been repeatedly emphasized that webpages should be viewed as an integrated meaning-making system with visuals and other media playing equivalent roles to verbal language (Chik & Vasquez, 2017; Taneja & Wu, 2019), few studies have comprehensively examined the visual–verbal interfaces of corporate webpages. Yet such an investigation may help further our understanding of how various verbally- and visually-based modes are orchestrated to fulfill their communicative goals online.

In addition, previous multimodal studies of webpages were usually conducted from a single-cultural perspective (Cheng, 2016; Brookes & Harvey, 2017). Little research has looked into these digitized artifacts through a cross-cultural lens and examined how their multimodal meaning construction is correlated with their cultural background. Corporate websites, as typical vehicles for marketing and advertising communications, have long been considered as unique carriers of contemporary culture and reflect specific cultural orientations and preferences (Baack & Singh, 2007). Whether potential cross-cultural differences exist in the use of multimodal resources among corporate websites from distinct cultural contexts is a crucial and interesting question that deserves thorough investigation.

In the current study, we aim to identify the similarities and differences in the multimodality of Chinese and U.S. companies' homepages. Following previous literature (Kong, 2013), we define multimodality as the verbal-visual composition and arrangement of contents on homepages. Specifically, we identify and compare four primary types of multimodal resources including textual, pictorial, diagrammatic, and video resources that are presented on corporate homepages (Kong, 2013; Tan, 2010). We chose to study homepages because they serve as the gateway to the sites while fulfilling the essential communicative function of initiating and encouraging further exploration of the sites. The composition and arrangement of various verbal and visual features on the homepages can substantially impact web users' impressions of the sites and ultimately influence the effectiveness of web communication (Cheng, 2016).

We select Chinese and U.S. corporate homepages for a cross-cultural comparison for two reasons. First, these two countries generally demonstrate distinctive orientations and preferences towards major cultural dimensions and follow differentiated communication styles (Shi & Wang, 2011). These cross-cultural dissimilarities provide a better chance to observe culture's impact on corporate communication. Second, as the world's two largest economies, China and the U.S. possess dynamic business environments and large multinational enterprises with highly developed Internet infrastructure. A cross-cultural investigation of their web communication styles may provide practical and valuable insights into online international business communication for multinational companies, both in and out of these two cultural contexts.

In the following sections, we first review literature pertinent to multimodal and cross-cultural studies of webpages. Next, methodological issues are discussed. Then, the research findings are presented and discussed. The last section draws a conclusion, outlines managerial implications, and suggests the avenues for further research.

LITERATURE REVIEW

Multimodal Characteristics of Webpages

The term *modality* can be defined from different perspectives. Modality is sometimes used in connection with physiological or sensory channels as well as capacities such as seeing, hearing, touching, tasting, and smelling (Pauwels, 2012). It can also be defined from the perspective of the medium, referring to different types of semiotic (relating to signs and symbols) resources or expressive systems such as texts, images, music, vocal and non-vocal sounds (Pauwels, 2012). Whenever at least two input (senses) or output (medium) modes are involved, they can be considered to be multimodal. Thus, in terms of both senses and medium, a webpage can be characterized by its multimodal nature, as it involves at least two senses (sight and hearing) and a variety of semiotic meaning-making modes (texts, images, etc.).

The multimodal characteristics of webpages have drawn much attention from academia in recent years. Bateman (2008) and Kong (2013), for example, proposed that a multimodal page document basically

contained three types of semiotic elements: textual (such as words), pictorial (such as images), and diagrammatic resources (such as charts and diagrams). They also emphasized that for webpages, one should not ignore multimedia resources, such as videos and audio. In addition, Tan (2010) conducted a detailed analysis of a movie campaign website and argued that the multimodal resources presented on a webpage included verbal texts, visual images, photographs, graphic displays, animated items (such as speech, music, and sound), and more. Similarly, Michelson and Valencia (2016) studied a university promotional website and found that some of the most important semiotic resources on a webpage were linguistic items (such as written texts and hyperlinks), visual items (such as images and icons), and audio and video items (such as music).

In general, previous studies tend to agree that webpages as a communicative medium afford the co-deployment of different types of semiotic meaning-making modes that all have particular affordances. Textual, pictorial, diagrammatic, and audio and video elements are some of the most salient semiotic or multimodal resources presented on a webpage. Therefore, based on previous literature (Kong, 2013; Tan, 2010), we classify the multimodal resources of a webpage into four types: textual (such as verbal texts and textual hyperlinks), pictorial (such as images, photographs, and icons), diagrammatic (such as diagrams and figures), and video (such as Flash animations) resources. The subordinate components of these four types of multimodal resources are discussed in detail in the Methods section of this article. Audio resources are excluded from the typology because based on a pilot study (which is illustrated in the Method section), we found that audio elements were seldomly presented on corporate homepages.

Multimodal Analysis of Webpages

Although some recent attempts have been made to interpret webpages through a multimodal perspective, it is still much of an understudied area considering the overall paucity of relevant literature. Previous studies have mainly explored how people deploy a variety of verbally- and visually-based resources to fulfill interwoven communicative goals on the web. For instance, an early study from Knox (2007) investigated the visual, verbal, and visual–verbal communication on webpages of online newspapers and identified that a genre-specific visual grammar was emerging for online newspaper webpages in response to the demands of the new medium and historical and social trend in news reporting. In a similar vein, Johnson and Carneiro (2014) analyzed the ensemble of multiple modes of communication on the webpages of ethnic museums and their role in the presentation of the ethnic identity and cultural heritage of the museums. Cheng (2016) studied the visual and verbal resources utilized in hotel webpages and found that different discursive strategies were adopted in the selection of semiotic resources to construct differentiated brand identities of the hotels.

Collectively, the above studies provide valuable insights into the multimodal nature of webpages and how various verbal and visual modes make meaning through interaction in combination. However, these studies still leave room for further exploration. For instance, previous research mostly takes a discourse analytical approach, concentrating on examining the socio-psychological characteristics of the documents and emphasizing the historical and social specificity of meaning production (Knox, 2007; Johnson & Carneiro, 2014). Little research has taken a structure-based perspective and explored the textual-visual interfaces of webpages. In addition, much research is qualitatively oriented and focuses on a restrained number of webpage samples (Michelson & Valencia, 2016; Brookes & Harvey, 2017). Despite all the strengths associated with qualitative analysis, it has its own limitations, such as lacking statistical representation and limited scope of generalization (Flick, 2009, p. 374-377). To contribute to this field of literature, we conduct a systematic study on the multimodality of Chinese and U.S. corporate homepages, specifically focusing on their similarities and differences in verbal-visual composition and arrangement. In the current study, we take a more rigorous empirical approach by combining both qualitative and quantitative analysis of a collection of corporate homepages.

Cross-cultural Analysis of Webpage Discourse

There have been calls in recent years for cross-cultural research to investigate the social and cultural integration and differentiations in digital communication materials (Kong, 2013; Pauwels, 2012). Some preliminary findings have shown that there are salient differences in the deployment of verbal and visual resources among webpages from different cultural contexts. In a study of McDonald's local websites around the world,

Wurtz (2005) found that websites from high- and low-context cultures showed significant differences in the use of visual resources, as websites of high-context countries used more visuals than the ones of low-context countries. Later, Pérez (2014) examined textual elements on webpages and had similar findings that the rhetoric and interactional meta-discourse strategies adopted by Spanish and U.S. companies were significantly different from each other. Similarly, Belova (2017) found distinctive patterns in the use of personal pronouns and forms of address between Spanish and Russian corporate websites, reflecting their different cultural orientation towards power distance.

Most comparative studies on webpage discourse are based on well-established cultural theories, with Edward Hall's (1976) and Geert Hofstede's (1980) frameworks being used as their major cultural parameters. Hall (1976) proposed the concepts of high-context and low-context cultures to differentiate between societies based on the styles in which people communicate. High-context culture relies on implicit communication and nonverbal cues, whereas low-context culture depends on explicit verbal communication. Hofstede (1980) decoded cultural differences from a different perspective and distinguished social groups mainly based on five cultural orientations: Individualism/collectivism, masculinity/femininity, power distance, uncertainty avoidance, and long-term/short-term orientation. Admittedly, these two cultural models have sparked criticisms over the years about their theoretical validity, methodological reliability, etc. (Callahan, 2005; Cardon, 2008). Yet they have been two of the most extensively used cultural theories in cross-cultural discourse and communication studies and are empirically validated to be major predictors in communication styles (Arasaratnam, 2015; Wurtz, 2005). Following previous studies, we will employ both Hall's and Hofstede's theories to interpret the similarities and differences in the multimodality of Chinese and U.S. corporate homepages.

METHODS

In order to fulfill the research objectives of the present study, we mainly followed four steps to conduct the research:

- Adapting previous models to analyze corporate homepages,
- Developing our own framework for annotating corporate homepages,
- Collecting the sample homepages, and
- Analyzing the sample homepages.

The following sections will elaborate on each step in the sequence.

Adapting Previous Models to Analyze Corporate Homepages

Developing a valid annotation framework (i.e., a systematic framework for analyzing the multimodal elements presented on webpages) lays the foundation for performing a quantitative- and qualitative-based multimodal analysis on corporate homepages. Because almost no previous studies have constructed such a framework specifically for corporate homepages, we developed our framework by taking inspiration from the Genre and Multimodality project which is accordingly called the GeM model (Bateman, 2008) and from the frameworks proposed by Kong (2013) and Thomas (2014).

The GeM model is a framework for systematic and empirical investigation of page-based multimodal documents. It treats a multimodal document as a multi-layered semiotic artifact and distinguishes five principal analytical layers: *the GeM base*, *layout base*, *rhetorical base*, *navigation base*, and *genre base* (Bateman, 2008, p. 108). Among the five layers, *the GeM base* is the starting point for analysis and identifies the basic units which are the elementary and minimal elements any page deploys to carry its meanings; *the layout base* is another fundamental layer that characterizes the page in terms of layout properties and structure (Bateman, 2008, p. 108-112). In the current study, we aim to examine how various multimodal resources are composed and arranged on corporate homepages, and these purposes can mainly be achieved through analyses at *the GeM base* and *layout base*. Therefore, our study mainly focuses on these two layers.

Based on the GeM model, Kong (2013) and Thomas (2014) established their annotation framework for analyzing page-based multimodal documents and investigated the verbal-visual composition and arrangement of newspapers and product packages, respectively. As webpages can be treated as multimodal page documents as well, we take a similar approach to examining the verbal-visual structure of corporate homepages.

Developing a framework for annotating corporate homepages

To develop our own annotation framework for corporate homepages, we first thoroughly analyzed all the base units suggested by the GeM model (Bateman, 2008, p.111) and by Kong (2013) and Thomas (2014). Then we carried out a pilot study on the official local websites of five Chinese and five U.S. companies to detect and confirm the elements they had as the base units of the new framework. These 10 companies were randomly selected from the 2020 Fortune Global 500 list. Each identified base unit was carefully examined to ensure it was up-to-date and actively appeared on corporate homepages. It also should conform to the original theorization of base units proposed by the GeM model. Based on the pilot study, we made necessary revisions to the framework and its sub-items.

The finalized framework contains 4 types of multimodal resources, including textual, pictorial, diagrammatic, and video resources (discussed in the Literature Review section), and 31 subordinate base units. The detailed annotation framework along with the explanations is presented in Table 1. The annotation framework concerns the base unit analyses of corporate homepages, based on which further investigation at the layout base is conducted.

Table 1. Annotation Framework for base unit analysis of corporate homepages.

Unit type	Base Units	Explanations
Textual	T1 Sentence	Sentences in normal format
	T2 Emphasized text	Text in bold, with bigger font, or in salient color
	T3 Vertical news item	News items vertically displayed in list
	T4 Vertical menu item	Menu items vertically displayed in list
	T5 News headline	Headlines, titles, and headings of news
	T6 Read-more item	Items indicating “more”, “Read more”, etc.
	T7 Webpage header	Usually include features such as language selection, zone selection, etc.
	T8 Webpage footer	Usually include features such as website legal, registration information, etc.
	T9 Text in picture	Recognizable texts embedded in pictures
	T10 Title of picture	Heading or title of pictures
	T11 Digit button	Digit buttons for selection
	T12 Digit & number	Separately displayed digits or numbers
	T13 Date	Separately displayed dates
	T14 Headline list	Horizontally or vertically displayed headline or heading lists
	T15 Title of column	The titles of web columns with different themes and content
	T16 Item in menu matrix	Menus items displayed in matrix
	T17 Horizontal menu item	Menu items horizontally displayed in list
	T18 Top menu item	Menu items displayed in the top navigation bar
Pictorial	P1 Theme picture	Pictures usually displayed under the header and at the center of the webpage
	P2 List box	a box that contains a list of options
	P3 Button	Buttons that appear in the form of picture or icons
	P4 Picture	Photos, pictures, drawing, etc.
	P5 Icon	Recognizable icons
	P6 Search box	Search boxes in the webpages
	P7 Social media icon	Icons for various social medium
	P8 Company logo	Logos of companies
	P9 QR code	Recognizable QR codes
Diagrammatic	D1 Table	Different types of tables
	D2 Figure	Figures, graphs, charts, etc.
Video	V1 Video	Different types of videos
	V2 Flash animation	Different types of Flash animations

Considering that corporate homepages consist of a variety of multimodal resources and the investigation of trivial variations across homepages is not the focus of this study, the framework mainly concentrates on the most salient and essential semiotic resources that play crucial and fundamental roles in meaning-making and message conveying. The base units identified also should fall into the four-category typology of multimodal resources recognized by the present study. It is noteworthy that the webpage header and footer are considered as two integrated base units because these two sections are respectively located at the very top or the bottom of the webpage and usually contain such information as language choice as well as legal and registration information that is formatted in a quite similar and uniformed way. They rarely affect the overall structure and layout of the homepage or present salient cross-cultural differences in multimodal composition and arrangement. Therefore, we treat these two sections as composite base units and do not dig into their internal verbal-visual composition and arrangement.

Collecting the homepages

In the study, we randomly selected 35 Chinese and 35 U.S. companies from the 2021 Global Fortune 500 list as sample companies for data collection of corporate homepages. These 70 companies do not overlap with those in the pilot study. They represent a wide range of industries, including energy, construction, banking, insurance, technology, and such. The sample companies are presented in Table 2.

We used the mixed-method data analysis software MAXQDA (VERBI Software, 2018) to collect the multimodality data on the homepages of the 35 Chinese and 35 U.S. companies' local websites (Chinese homepages in Chinese versus U.S. companies' homepages in English). The MAXQDA Web Collector, an add-on for the Internet browser Google Chrome, was used to save the screenshots of the entire webpages in MWEB format, which is specially developed for storage and further processing in MAXQDA. Videos and Flash animations were separately downloaded and imported into the software. As constant changes and updates on websites may affect the consistency and accuracy of the analyses, we followed Shin and Huh's (2009) approach and collected the homepage of each company on the same day. We collected all the homepages from August to December of 2021.

Analyzing the homepages

The two authors of this study strictly followed the annotation framework and annotated the 70 sample Chinese and U.S. corporate homepages with MAXQDA. The frequency of occurrence of each base unit was counted for each individual homepage. For example, if a homepage contained a horizontal menu with multiple menu items, the specific number of the items listed in the menu would be counted. Insets were identified separately. When a base unit intruded into the space of other base units, the intruding base unit was counted separately. Figure 1 presents an example of how base units were identified. All the quantitative annotation data were exported into and processed in SPSS.

Table 2. The sample Chinese and U.S. companies

	Company name
Chinese companies (*n* = 35)	Agricultural Bank of China, Anhui Conch Group, Aviation Inudstry Corp. of China, Amer International Group, Bank of China, Bank of Communication, China Merchants Bank, China Electronics, China National Offshore Oil, China Huaneng Group, China Electronics, China Energy Investment, China Construction Bank, China Mingsheng Banking, China Southern Power Grid, China Railway Engineering Group, China Henngli Group, China Life Insurance, Citic Group, Huawei, Industrial Bank, ICBC, Lenovo, Midea, New China Life Insurance, Jingye Group, Ping An Insurance, Power Chin a, People's Insurance of China, Pacific Construction Group, State Grid, Shanghai Pudong Development Bank, Shanxi Yanchang Petroleum, Sinopec, WH Group
U.S. companies (*n* = 35)	AIG, Allstate, Bank of America, Berkshire Hathway, Chevron, Cisco Systems, Citi Group, Centene, CVS Health, Dell, Energy Transfer, Exxon Mobil, Fannie Mae, Freddie Mac, Fedex, Goldman Sachs, General Dynamics, General Electric, JPMorgan Chase, HP, Honeywell, IBM, Intel, Liberty Mutual Insurance, Lockheed Martin, Marathon Petroleum, Metlife, Microsft, Morgan Stanley, State Farm Insurance, TIAA, Valero Energy, Verizon, Wells Fargo, Phillips66

Basic unit	T3	T4	T6	T7	T8	T9	T10	T11	T15	T16	T18	P1	P3	P4	P7	P8
Frequency	12	4	3	1	1	11	1	6	5	8	6	1	6	10	4	2

Figure 1. An example of base unit analysis of a corporate homepage.

RESULTS AND DISCUSSION

Overall Findings

The overarching goal of this study is to explore the similarities and differences in the multimodality between Chinese and U.S. corporate homepages. The frequencies of the four types of multimodal resources exhibited on Chinese and U.S. corporate homepages are presented in Table 3. The sample Chinese homepages make use of 2876 base units in total. On average, each Chinese homepage employs 82.17 base units, with 65.74 textual elements, 15.20 pictorial elements, 0.94 video elements, and 0.29 diagrammatic elements. In contrast, the sample U.S. homepages employ 1678 base units in total, and on average, each U.S. homepage makes use of 47.94 base units, with 34.51 textual elements, 12.94 pictorial elements, 0.31 video elements,

and 0.17 diagrammatic elements. The results indicate that both Chinese and U.S. corporate homepages are text- and pictorial-dominated multimodal artefacts in which most of the semiotic resources deployed are textual and pictorial elements.

A series of independent-samples t-tests were further conducted to compare the mean frequencies of multimodal resources presented on Chinese and U.S. corporate homepages. As presented in Table 3, significant differences in the usage of multimodal resources were reported between these two parties. Chinese homepages overall feature significantly more base units than their U.S. counterparts ($p < .01$). This difference is mainly attributable to their distinctive usage of textual and video resources as Chinese homepages make significantly greater use of both textual and video resources than U.S. homepages (all $p < .05$). Yet no significant differences are found in their use of pictorial and diagrammatic resources (all $p > .05$). These findings reveal that Chinese corporate homepages typically accommodate more multimodal resources than U.S. homepages, with particular emphasis placed on textual and video elements. The specific usage of these four types of multimodal resources between Chinese and U.S. corporate homepages will be addressed in detail in the following sections.

Table 3. Distribution of multimodal resources on Chinese and U.S. corporate homepages.

	Chinese homepages (*n* = 35)	U.S. homepages (*n* = 35)	t-test
			t
Textual resources	65.74	34.51	5.31**
Pictorial resources	15.20	12.94	1.50
Diagrammatic resources	0.29	0.17	0.88
Video resources	0.94	0.31	4.68*
Total	**82.17**	**47.94**	**5.14****

**$p < .01$; * $p < .05$

Use of Textual Resources

Table 4 presents the mean frequencies of textual units used by Chinese and U.S. corporate homepages. The five most frequently used textual units on Chinese corporate homepages are vertical news items, vertical menu items, titles of columns, top menu items, and dates. Whereas the five most used textual units on U.S. corporate homepages are top menu items, sentences, vertical menu items, news headlines, and titles of columns.

A series of independent-samples t-tests show that Chinese corporate homepages make significantly greater use of vertical news items ($p < .01$), vertical menu items ($p < .05$), texts in picture ($p < .01$), digit buttons ($p < .05$), dates ($p < .05$), titles of columns ($p < .01$), items in menu matrix ($p < .05$), and top menu items ($p < .01$). While U.S. corporate homepages feature significantly more news headlines ($p < .01$) than their Chinese counterparts.

Table 4. Distribution of textual resources on Chinese and U.S. corporate homepages.

	Chinese homepages (*n* = 35)	U.S. homepages (*n* = 35)	t-test
			t
T1 Sentence	4.80	4.29	0.75
T2 Emphasized text	0.54	0.46	0.77
T3 Vertical news item	10.91	0.49	7.35**
T4 Vertical menu item	8.40	4.00	2.08*
T5 News headline	0.74	3.94	-3.62**
T6 Read-more item	2.80	3.11	-1.21
T7 Webpage header	1.00	0.97	0.54
T8 Webpage footer	0.89	0.94	-0.98
T9 Text in picture	3.37	1.00	3.97**
T10 Title of picture	1.03	0.80	1.23
T11 Digit button	0.23	0.03	2.58*
T12 Digit & number	0.31	0.46	-1.45
T13 Date	6.31	1.89	3.47**
T14 Headline list	2.09	1.20	2.01
T15 Title of column	7.63	3.14	4.49**
T16 Item in menu matrix	2.83	0.17	2.56*
T17 Horizontal menu item	4.91	2.69	2.23
T18 Top menu item	6.94	4.94	3.38**

** $p < .01$; * $p < .05$

A closer look at the differences in the use of textual resources between Chinese and U.S. corporate homepages leads to another two important observations. First, Chinese corporate homepages compared to their U.S. counterparts employ more menu items, digit buttons, and titles of columns. Chinese homepages' preference for these types of elements is possibly

correlated with Chinese collectivistic and high-context cultural orientation. In the first place, China, as a typical collectivistic country, attaches great importance to rapport building (Shi & Wang, 2011). In online communication environment, elements such as menus, column titles, and buttons are typical directional aids that can facilitate web users to navigate around the websites (Kim, Coyle, & Gould, 2009). They are the fundamental building blocks of online interactivity, serving not only textual function of organizing content but also interactive purpose of rapport building (Kim et al., 2009; Wurtz, 2006). Influenced by Chinese collectivistic culture, Chinese companies may strive to promote interaction with web visitors by resorting to these directional aids. These elements can constantly provide navigational guidance to the visitors and invite them to further explore the websites. Similar findings are also reported by Kong (2013) who found that Chinese newspapers, compared to British newspapers, showed higher tendency to build interpersonal relations with audience by using a larger number of directional titles and arrows to facilitate navigation.

In addition, the higher frequent usage of elements such as menu items, digit buttons, and titles of columns may also reflect Chinese high-context communication. Influenced by the high-context culture, Chinese generally prefer indirect and implicit communication, heavily replying on message receivers' ability to grasp the meaning from the context, instead of explicitly articulating the information (Wurtz, 2006). Items such as menus, clickable buttons, and column titles only indicate the theme of the content and provide a gateway to the information, rather than offering elaborated details. Web visitors need to proactively click on the items to obtain further information. These items thereby provide a less direct but more exploratory communicative experience to the visitors. This communicative process essentially conforms to the high-context communication norms valued by the Chinese culture. Conversely, the U.S., as a typical individualistic and low-context country, put less emphasis on rapport building and rely more on direct and explicit communication (Wurtz, 2006). Therefore, U.S. companies show a lower tendency to make use of directional elements than their Chinese counterparts.

The other intriguing observation is that Chinese and U.S. corporate homepages show significant differences in their use of news-related items. Chinese homepages make greater use of vertical news titles and dates, while U.S. homepages feature more news headlines. This dissimilarity mainly results from their differentiated deployment of news-related elements. When organizing the news column, Chinese homepages prefer to arrange multiple news titles into a vertical list and attach a date to each title, without showing news summaries. Each news title is considered as a joined element to the entire news column. Conversely, U.S. homepages tend to exhibit an individual news headline with a brief news summary situated right beneath or aside. Each news headline along with the summary or other linked elements are structured as specific and separate entities. Figure 2 presents two example homepages, along with their base and layout analyses. The news column on the Chinese homepage contains six parallelly-listed vertical news items and each item is followed by a date in the same line. In contrast, four separate news columns are observed on the U.S. homepage, and each column has its own news headline and news summary (a sentence) attached beneath.

The above findings partially echo those from Wang and Wang (2009) in their study of Chinese and German technical manuals. Wang and Wang (2009) found that, in terms of content organization, the Chinese manuals were often structured as entities with interrelations or context—in another words, the texts often consisted of one topic and a few subtopics as attached elements, while the German texts tended to be structured with specifically and separately organized individual elements. Wang and Wang (2009) attributed this phenomenon to the distinct thought patterns between China and Germany: The Chinese, with synthesis thought patterns, tended to join separate elements in their way of holistic thinking; whereas the Westerners, with analysis thought patterns, usually followed an imaginary dissection of a whole into its parts and of a system into its elements.

In addition, the dissonance in composition of news column between Chinese and U.S. corporate homepages may also be associated with their differentiated communication styles. As discussed above, China as a high-context country prefers indirect and implicit communication (Wurtz, 2006). Influenced by such communication styles, Chinese homepages arrange multiple news titles in a list, without explicitly providing further details on each news item. The information is generally provided in an indirect rather

Figure 2. Examples of news columns and their base unit and layout base analysis

than a straightforward way. Web visitors are left with the freedom to make decisions about whether to proceed to seek further information (i.e., whether to click on the hyperlinks to certain news items). On the contrary, U.S. homepages, under the influence of U.S. low-context culture, tend to take a direct and explicit communicative approach by exhibiting both news headlines and news summaries. No matter whether web visitors click on the headline or not, they can grasp the main points of the news content by reading the openly displayed news summaries.

Use of Pictorial Resources

As presented in Table 5, the most frequently used five pictorial elements on Chinese corporate homepages are pictures, icons, company logos, social media icons, and theme pictures. While the most used five pictorial resources on U.S. corporate homepages are pictures, social media icons, icons, theme pictures, and company logos.

Several independent-samples t-test analyses show that Chinese homepages feature significantly more pictures ($p < .05$), buttons ($p < .05$), and QR codes ($p < .01$) than U.S. homepages; whereas U.S. homepages contain significantly more theme pictures ($p < .05$) and social media icons ($p < .01$) than their Chinese counterparts.

Table 5. Distribution of pictorial resources on Chinese and U.S. corporate homepages.

	Chinese homepages (n = 35)	U.S. homepages (n = 35)	t-test t
P1 Theme picture	0.91	1.40	-2.30^{*}
P2 List box	0.57	0.23	1.12
P3 Button	0.37	0.11	2.40^{*}
P4 Picture	6.89	4.54	2.53^{*}
P5 Icon	3.20	1.74	1.23
P6 Search box	0.23	0.49	-0.87
P7 Social media icon	1.17	3.20	-4.10^{**}
P8 Company logo	1.26	1.23	0.45
P9 QR code	0.60	0.00	4.03^{**}

** $p < .01$; * $p < .05$

The analyses indicate that one major difference in the use of pictorial resources between Chinese and U.S. corporate homepages lies in their use of pictures. Despite the extensive use of pictures by both parties, Chinese homepages feature remarkably more pictures than U.S. homepages. Meanwhile, Chinese homepages tend to use multiple small-sized pictures arranged parallelly in a horizontal or vertical list or a matrix; whereas U.S. corporate homepages prefer to deploy one single large-sized picture as the background, with other textual or visual elements embedded within or placed aside it. Figure 3 presents two example homepages, along with their base and layout analyses. On the Chinese homepage, the picture column contains eight atomized pictures placed parallelly, with a textual caption embedded in each picture. In contrast, the picture column on the U.S. homepage uses one large background picture, in which other base units (including one picture, one sentence, one company logo, etc.) are mapped as subordinate elements.

The above observations are in accordance with those from Kong (2013) who reported similar patterns in picture placement between Chinese and English newspapers. Kong (2013) found that Chinese newspapers often used multiple pictures as nuclei and rely on the column title as the meta-theme to anchor the meaning of more fragmented picture clusters, whereas English newspapers tended to rely on a larger background picture as the meta-theme of the column, with other semiotic items placed underneath or inside it. Kong (2013) contended that Chinese newspapers' preference for the more fragmented approach of atomized pictures, characterized by multiple entry points into the text, is in line with the traditional writing pattern in Chinese. With similar findings, our study indicates that such conventional layout of multimodal information on paper-based medium may have been transferred to the online communication contexts.

In addition, the differentiated deployment of pictures by Chinese and U.S. corporate homepages may also be associated with these two countries' distinctive communication styles and thinking patterns. As explained by Wurtz (2005), high-context cultures tend to use indirect and vague language and believe that truth will manifest itself through non-linear discovery processes, without having to employ rationality. High-context cultures are thus characterized by implicit communication and cyclical thinking. In the current study, Chinese homepages substantially follow Chinese high-context communication norms and take an indirect and reiterative approach in interaction. In pictorial arrangement, subsequently,

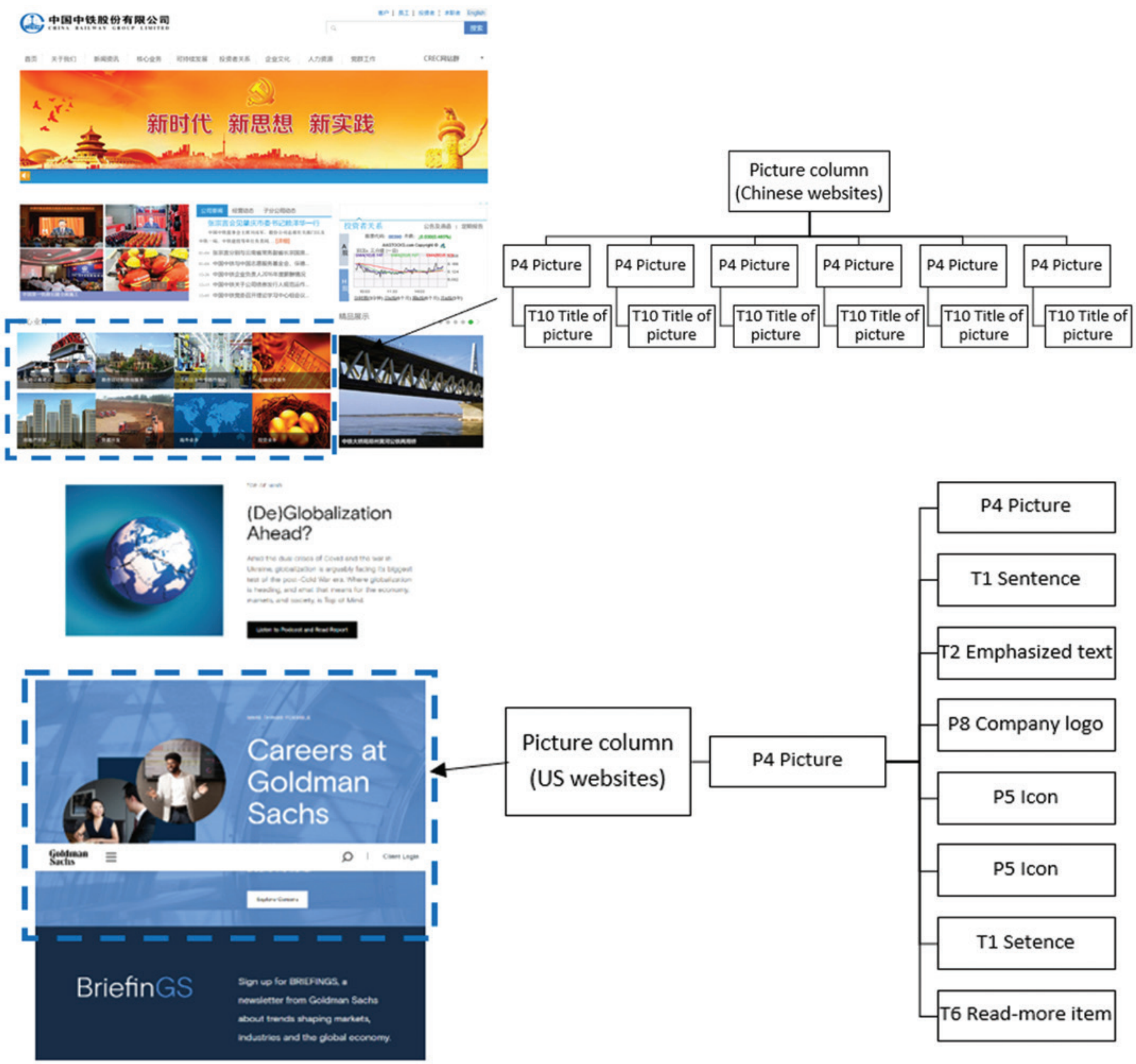

Figure 3. Examples of picture columns and their base unit and layout base analysis

they tend to arrange multiple similar-sized pictures in the picture column. To interpret the intended messages, web visitors need to go back and forth of the provided pictures to recognize and reconstruct the communication context in a cyclical way.

Still taking Figure 3 as an example, the picture column on the Chinese homepage illustrates the firm's "core business" (核心业务) which consists of eight business sub-functions. These sub-functions are respectively presented by the eight pictures with an explanatory text embedded in each picture. The pictures and texts combined create a unified and palpable context. When interpreting the meaning of the column (understanding the core business of the firm), web visitors need to go through all eight pictures in a cyclical way. They may start with anyone of the pictures and go to the next in any order or just go back and forth of all eight pictures. But they will not grasp the

complete meaning until they finish reviewing the entire picture column.

In contrast, low-context cultures prefer direct and precise communication and usually employ linear thinking that emphasizes logic and rationality (Wurtz, 2005). As a result, U.S. homepages tend to use a background picture and enclose other subordinate elements into it, integrating them into one hierarchically organized artifact. Web visitors are expected to treat it as a composite entity and decode the messages from one hierarchical layer to another hierarchical layer in a logical way. As in Figure 3, on the U.S. homepage, a series of subordinate elements are embedded in the background picture, and web visitors are expected to interpret the elements from one layer to another.

Another striking difference in the usage of pictorial elements between Chinese and U.S. corporate homepages resides in their presentation of QR codes and social media icons as hyperlinks to their social media platforms. Chinese homepages use more QR codes while U.S. homepages feature more social media icons. Chinese homepages' preference for QR codes may be closely associated with the recent digital payment boom in China. According to China Internet Network Information Center (2022), China is leading the usage of mobile payments in the world, with more than 904 million mobile payment users by the end of 2021. Most mobile payments in China are facilitated by QR codes scanning, which has become a ubiquitous practice in the country. Driven by the upsurge of QR codes, more and more Chinese companies start to incorporate these square-shaped bar codes into their websites, treating them as substitutes for social media icons and lead magnets for other marketing tactics. However, QR codes have not gained equivalent level of popularity in the U.S., and most U.S. companies still stick with standard social media icons as gateways to their social media platforms. Examples of Chinese and U.S. corporate homepages in use of social media icons and QR codes are presented in Figure 4.

Use of Diagrammatic and Video Resources

Finally, concerning diagrammatic and video resources, as presented in Table 6, both Chinese and U.S. corporate homepages have used a limited number of tables, figures, videos, and Flash animation. As tables are more likely to be used for in-depth information, these sites may have more tables on interior content pages. The results of several independent-samples t-tests show that Chinese corporate homepages make greater use of videos ($p < .01$) and Flash animations ($p < .01$) than their U.S. counterparts. No significant differences are found in their use of tables ($p > .05$) and figures ($p > .05$).

Table 6. Distribution of diagrammatic and video resources on Chinese and U.S. corporate homepages.

	Chinese homepages (*n* = 35)	U.S. homepages (*n* = 35)	t-test t
D1 Table	0.09	0.09	0.00
D2 Figure	0.20	0.09	1.04
V1 Video	0.51	0.11	3.94^{**}
V2 Flash animation	0.43	0.20	2.10^{**}

** $p < .01$

The findings reveal in detail that the larger number of video resources on Chinese corporate homepages is mainly attributed to their more frequent usage of both Flash animation and videos. Wurtz (2005) and Kim et al. (2009) came up with similar findings that websites from high-context cultures tended to integrate more multimedia contents, such as videos, Flash animation, and interactive functions, than the ones from low-context cultures. As explained by Wurtz (2005), high-context communication underscores the importance of face-to-face communication and is

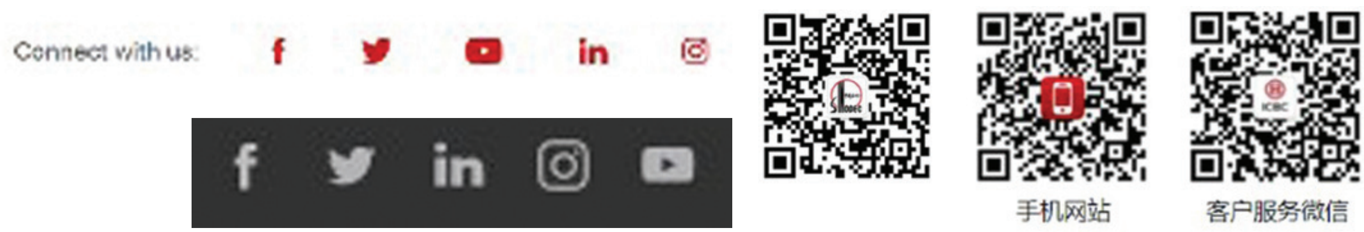

Figure 4. The comparison of U.S. and Chinese webpages in the use of social media icons and QR codes.

characteristic by an extensive use of nonverbal strategies for conveying meanings. The use of multimedia elements on websites is essentially an extension or transformation of nonverbal and behavioral language from real life interaction into online contexts (Wurtz, 2005). In this study, Chinese corporate homepages, under the influence of China's high-context culture, endeavor to provide web visitors with a sense of human representation as well as necessary communication cues, analogized to contextual information embedded in real-life communication. In accordance, visualized resources, such as company introduction videos, Flash animated greetings, company news videos, and interview videos, are more frequently displayed on Chinese corporate homepages. On the contrary, nonverbal and behavioral communication is less stressed by U.S. low-context culture, and multimedia items are correspondingly less frequently seen on U.S. corporate homepages.

CONCLUSION, IMPLICATION, AND FUTURE RESEARCH

The current study has examined and compared the multimodality of Chinese and U.S. corporate homepages, concentrating on the composition and arrangement of four types of multimodal resources, including textual, pictorial, diagrammatic, and video resources. Although overall, both parties are dominated by textual and pictorial elements, Chinese homepages are found to make greater use of textual and video resources than their U.S. counterparts. To elaborate, in terms of textual resources, Chinese homepages feature more directional elements to fulfill the purpose of rapport building and implicit communication. They also tend to present the news column in a less explicit way by arranging multiple news items in a list of titles without revealing the news content. In contrast, U.S. homepages prefer to organize the news column in a more straightforward manner, by exhibiting individual news titles attached with news summaries that explain the gist of the news. Regarding pictorial resources, Chinese homepages tend to follow cyclical communication rituals and display multiple small-sized pictures placed parallelly; whereas U.S. corporate homepages often employ linear communicative patterns and deploy one large background picture with other subordinate elements embedded in it. In addition, Chinese homepages use more QR codes, while U.S. homepages feature more social media icons. Finally, concerning video and diagrammatic resources, Chinese homepages, compared to their U.S. counterparts, utilize more Flash animations and videos to provide needed context cues and a sense of human representation.

The findings of this study may contribute to the current literature in the following ways. First, in the study, we construct an annotation framework for systematically analyzing the composition and arrangement of multimodal resources on corporate homepages. The framework has been tested and verified in this research and can serve as the annotation instrument for other varieties of digital documents, such as social media platforms and mobile apps, to name a few. Second, departing from the traditional qualitative research approach, we adopt a quantitatively oriented method and provide a more nuanced and objective picture of the multimodal nature of corporate homepages. Third, rather than limiting the analyses in a single cultural context, we conduct a comparative study on Chinese and U.S. corporate homepages. The findings, based on a genre-sensitive and empirically grounded approach, verify the influence of culture on business online communication, and further attract our attention to cross-cultural variations in the verbal-visual interfaces on online communicative platforms.

From the findings, we can also draw some managerial implications. First, the study provides an overview of how a corporate webpage as a communicative medium affords the co-deployment of different multimodal meaning-making resources. These multimodal resources are orchestrated to fulfill the intended communicative goals online. Specifically, in this study, we provide a feasible and reliable way for corporate communication practitioners to examine the verbal-visual interfaces on their firms' websites. We propose an annotation framework that can serve as a practical manual to assist corporate communication practitioners to inspect the status quo of the multimodality of their firms' homepages. Based on the investigation, corporate communication practitioners may further modify or change how various types of multimodal resources are deployed and arranged on the sites.

Moreover, the study reminds us again of the importance of identifying cross-cultural differences when doing international business (Craig et al., 2005). Cultures have long been considered powerful forces that shape perceptions and behaviors (Hofstede,

2011). Propelled by the Internet boom, this cross-cultural challenge has been transferred from the offline environment to the virtual world. Similar as it is in the offline context, culture still acts as a decisive factor that exerts enormous influence on various aspects of people's behavior and decision-making process online. The organized and widely practiced web communication approach adopted by firms in one culture may not be adopted and well-accepted by those in another. Corporate communication practitioners should be more sensitive to the potential cross-cultural differences as well as their impacts and be better prepared to make necessary cross-cultural adaptations to facilitate online business communication across borders.

Finally, the findings suggest effective ways for companies to properly address cross-cultural differences in the use of multimodal resources in web communication. When communicating with an audience from a collectivistic and high-context culture, corporate communication practitioners are advised to use more directional resources, such as menu items, buttons, and column titles on webpages, in order to fulfill the interactive purpose of rapport building desired in collectivistic societies. They may also arrange news columns in a less explicit way, by providing multiple news items in a list of titles without revealing much detail. In addition, the picture column may be organized with fragmented picture clusters which can be well-accepted in high-context cultures. Lastly, more multimedia elements, such as videos and Flash animations, should be used to provide necessary context cues and a sense of human presence to web users.

For the audience in a culture characterized by individualistic and low-context communication, corporate communication practitioners may take a different approach to organize news columns. They may provide more details about the news content by both displaying individual news titles and offering news summaries. Moreover, to follow the linear thought patterns in low-context cultures, they may organize the picture column in a more logical way, by presenting one large background picture and embedding subordinate elements in it.

The present study needs to be understood with the awareness of the following limitations. First, the cross-cultural comparison is limited to Chinese and U.S. companies, which leaves room for future studies to expand the research to other cultural contexts. A multiple-country comparison can be especially helpful to further demonstrate culture's influence on corporate online communication. Second, we only focus on salient multimodal elements presented on webpages, excluding other informational semiotic items, such as colors, column delimiters, and such. Future research may consider incorporating a more complete pool of multimodal elements into the analyses. Finally, our analyses are based on a collection of sample companies that are randomly selected and come from a diverse range of industries. Future studies may limit the research to one or two industries or conduct an industry-wide comparison to test whether the industry effect applies to the multimodal composition and arrangement of corporate websites.

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Incorporating Computer-Mediated Communications in EFL Reading

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By Hui-Fang Shang

Abstract

Purpose: The incorporation of computer-mediated communication (CMC) has been widely used in recent English as a foreign language (EFL) teaching and learning due to the rapid advancement of technology. Despite the prevalence of online CMC communications, previous research has yielded mixed results, and empirical evidence on how online communications affect student reading comprehension is limited. This study compares the effects of online asynchronous and synchronous communications on EFL reading comprehension in a Taiwanese collaborative learning context.

Method: Ten reading comprehension tests and an online questionnaire survey were administered to 100 university students enrolled in two senior reading classes in Southern Taiwan. Independent-sample t-tests, descriptive statistics, and Pearson product-moment correlation analyses were computed to investigate the differences and relationships between perceived asynchronous and synchronous communication use on EFL reading comprehension performance.

Results: The findings revealed that participants used the synchronous communication mode more frequently than the asynchronous mode. The reading score obtained through the synchronous group was slightly higher than that obtained through the asynchronous group; no statistically significant difference was found. As students practiced more in asynchronous and synchronous communication modes, their reading comprehension ability improved significantly.

Conclusion: Although learners generally accept both online communication modes, the open-ended question results reveal several disadvantages and advantages of online communication environments. The study's limitations, as well as the implications for instructional pedagogy and future research, are presented and discussed.

Keywords: Computer-Mediated Communication (CMC), Asynchronous Communication, Synchronous Communication, EFL Reading Comprehension

Practitioner's Takeaway

- Taiwanese English as a foreign language (EFL) students use the synchronous communication mode more frequently than asynchronous mode. This might have implications for technical communication pedagogy, especially as it related to EFL students.
- When teaching Taiwanese EFL students, technical communication instructors should consider that synchronous groups have better perceptions of computer-mediated communication than the asynchronous groups.
- Both mode (synchronous and asynchronous) appear to be equally effective in improving EFL reading comprehension.

Research on reading has shown that reading exists as a complex cognitive activity required for adequate functioning and information acquisition in modern society (Alfassi, 2004). In some countries, reading English as a foreign language (EFL) efficiently and effectively is the most important and critical skill that influences university students' success in their future careers (Koda & Zehler, 2008). The common justification is that comprehension of English text is an important tool for obtaining information on a wide range of topics (Pan, 2010). However, Taiwanese EFL students' reading comprehension remains poor; not all readers have the essential knowledge and experience to relate to the text (Chen et al., 2011).

Previous research indicates that in peer communication environments, EFL students can learn not only a language but also knowledge about various subject matters (Zhang et al., 2016). Peer communication enables language learners to collaborate while also improving their grammar, reading comprehension, and problem-solving abilities (Zhang, Anderson, & Nguyen-Jahiel, 2013). With the rapid advancement of technology, the incorporation of computer-mediated communication (CMC) has become increasingly common in recent EFL teaching and learning. CMC, also known as computer-assisted class discussion (CACD) or computer-mediated discussion (CMD), can effectively provide learners with opportunities to practice their foreign language while communicating with peers, either immediately or at a specific time, overcoming traditional time and space constraints (Tsuei, 2011; Yuan & Kim, 2018). According to previous research (Al-Jabri, 2012; Chen, 2013; Gikandi & Morrow, 2016; Hsieh & Ji, 2013; Jong et al., 2014; Lage, 2008; Rezaee & Ahmadzadeh, 2012), CMC can be divided into two communication modes. The first mode is asynchronous or delayed-time communication via email, blogs, Moodle (a modular object-oriented dynamic learning environment), and other education-based bulletin boards. The second mode is synchronous or real-time communication via WeChat, Facebook, and/or audio/video conferencing. EFL learners can easily communicate with other learners synchronously (i.e., all users are logged on and discuss simultaneously) or asynchronously (i.e., learners do not discuss in a real-time environment) using CMC and the internet.

Previous research has demonstrated that online collaborative asynchronous and synchronous communications can provide authentic peer communication while also assisting students in improving their reading comprehension (Hsieh & Ji, 2013). In other words, online communication requires learners to share ideas with peers, which improves reading comprehension (Cummins, 2008). According to Lu and Chiou (2010), online peer communications provide a collaborative environment to promote students' online participation in language learning by using technology and tools such as discussion boards, allowing learners to collaborate in learning development. Goggins and Xing (2016) suggests that a structured online peer communication forum, typically a text-based environment, could assist students in effectively learning course content. This type of collaborative learning allows students to share their ideas in public regardless of time or location (Vonderwell & Zachariah, 2005), reflect on them (Hewitt, 2005), facilitate knowledge acquisition, and improve academic outcomes (Goggins & Xing, 2016).

However, research has shown that using CMC in a language learning context does not always promote learner enhancement and reading comprehension due to negative perceptions or low motivation (Palvia & Palvia, 2007; Sistelos, 2008). Al-Jarf (2005), for example, demonstrated that students might have negative perceptions of online intervention because they are unfamiliar with online tools or believe that online learning is similar to chatting online with friends. Furthermore, there have been debates over whether online asynchronous or synchronous learning modes are more effective (Palvia & Palvia, 2007; Sistelos, 2008). Chen, Klein, and Minor (2008) discovered that using asynchronous peer discussions twice a week effectively meets communication needs in online learning. Learners can communicate with their peers at various times and locations based on their schedules and convenience. The disadvantage of asynchronous communication is that participants must wait longer for a peer's response, which may reduce motivation and engagement (Ashley, 2003). According to Stephens and Mottet (2008), the benefits of using synchronous learning environments include real-time knowledge sharing and immediate access to ask questions and receive answers from peers. However, because participants must attend sessions in designated rooms simultaneously, this type of synchronous environment may lack flexibility (Skylar, 2009).

Computer-Mediated Communication in EFL Reading

PURPOSE OF STUDY

Most research studies on collaborative peer discussion in the EFL reading context are conducted in a traditional face-to-face setting (Zhang & Zhu, 2017). Despite the prevalence of online communication, few studies have been conducted to investigate the impact of various modes of online discussion on the reading achievement of Taiwanese EFL university students (Goggins & Xing, 2016). As a result, it is critical to investigate whether increased use of the CMC learning approach positively affects students' English reading performance. As previously stated, research on the effects of asynchronous and synchronous CMC applications on EFL teaching and learning yielded inconclusive results, necessitating a comparison of the two modes and their impact on Taiwanese EFL reading comprehension (Hsieh & Ji, 2013; Skylar, 2009). This research aims to learn more about the effectiveness and relationship of these two online collaborative CMC modes on EFL reading performance. Three research questions are addressed based on the aim of this study:

1. How do asynchronous and synchronous communication interventions differ regarding EFL reading comprehension?
2. Does the frequency students participate in asynchronous and synchronous communications correlate with their reading comprehension scores?
3. What are the participants' perspectives on the efficacy and drawbacks of asynchronous and synchronous communication modes used in this study?

The study's findings will provide insight about what happens in online peer CMC environments for EFL teachers and curriculum designers. It also recommends that instructors consider balancing the use of different CMC modes, not only to increase students' motivation in collaborative peer learning environment but also to satisfy individual preferences and needs by understanding the benefits and drawbacks of using online CMC modes.

LITERATURE REVIEW

Asynchronous Communication

Asynchronous communication is a type in which learners can discuss with their peers by posting messages for mutual reflections and comments to produce more syntactically complex language and more words (Paulus, 2007; Rezaee & Ahmadzadeh, 2012; Zapata & Sagarra, 2007). Furthermore, because there is no pressure of real-time discussion, asynchronous communication creates a less stressful learning environment for shy and anxious students, with more participation and motivation (Shadiev et al., 2015; Shadiev et al., 2018). Li et al. (2018) investigated the relationship between asynchronous communication and course satisfaction in China, using 11 platforms, 321 courses, and over 13,000 ratings. According to the findings, asynchronous communication can significantly predict learner satisfaction. Science and technology courses, in particular, have a significantly different slope than humanities courses. Kent, Laslo, and Rafaeli (2016) used Ligilo as an online communication platform to study 231 students in eight classes from four universities. The study investigated the role of interactivity as a process of knowledge construction in asynchronous communication and its relationship to learning outcomes. According to the study's findings, asynchronous communication plays a vital role in predicting satisfaction and learning outcomes; the students who created the semantic network structured the discussion, implying a relationship between communication structuring and learning outcome.

Goggins and Xing (2016) proposed two asynchronous communication models and investigated potential factors and their impact on learning. According to the findings, the number of posts written by students significantly correlates with their learning performance. Furthermore, the less time a student takes to respond to other people's posts or the more time a student spends reading, the better the student's learning performance. Carroll (2011) discovered that the disadvantage of asynchronous communication is that participants must wait longer for the returned feedback, which may reduce learners' engagement in the asynchronous task. Furthermore, Watson, McIntyre, and McArthur (2010) stated that students' lack of facial expressions and body language in asynchronous communication might lead to misinterpretation, mainly if they are in a "high-pressure discussion or teamwork situation" (p. 24). Given the mixed results of previous studies and the scarcity of empirical research on reading outcomes, more attention should be paid to specific disciplines in the EFL reading context when monitoring asynchronous communication in English.

Synchronous Communication

Another type of CMC communication is synchronous communication, which requires both the sender and receiver of the message to be logged on simultaneously to communicate with each other (Kosalka, 2011). Participants in synchronous communication can construct more complex sentences, and it is an excellent medium for EFL learners to ask more questions and spend more time interacting with their peers in order to improve their interaction skills and communicative competence (O'Rourle & Stickler, 2017). Tsuei (2011) investigated the effects of synchronous peer-assisted learning on developing reading skills, peer interaction, and self-concept in 56 fourth-grade students (aged 10-11 years) from two classes at an elementary school in Taiwan. Regarding Chinese reading skills, the research findings revealed that students in the synchronous peer-assisted learning group outperformed those in the face-to-face group. Those studies conclude that synchronous activity significantly influences online peer interactions, which results in significant growth in the reading skills and self-concept of passive learners.

Al-Jarf (2014) investigated Elluminate Live, a web-conferencing software, as a synchronous supplementary reading comprehension practice. An experimental group of 25 students was randomly assigned to synchronous Elluminate Live reading practice sessions from home. In comparison, a control group of 24 students was assigned to face-to-face reading practice sessions in a classroom. The findings revealed a statistically significant difference in reading enhancement between the experimental and control groups. Furthermore, compared to the control group, the experimental group develops more positive attitudes toward synchronous communication and reading practices because synchronous web-conferencing creates a warm environment in which students receive more practice and immediate feedback from peers to resolve problems as soon as possible. As a result, synchronous web-conferencing software was deemed an effective tool for providing students with practical reading guidance.

McBrien, Jones, and Cheng (2009) investigated participants' satisfaction with three undergraduate and three graduate courses using the synchronous online learning mode. The findings of this study revealed that, while students are satisfied with the use of the synchronous online platform, they believe that a lack of in-person nonverbal sub-communication could lead to confusion among students. The study also discovered that technical difficulties influence students' perceptions of synchronous learning environments. Ng (2007) investigated the effectiveness of a synchronous e-learning system (Interwise) for online tutoring by interviewing six tutors and eight students. According to the findings, students and tutors were pleased with Interwise for online tutoring, and the peer interaction on this platform was deemed successful. Nonetheless, several students reported that technical difficulties could detract from their overall positive learning experience. Because there was conflicting evidence that synchronous peer communication produces positive outcomes, it is critical to assess the impact of EFL students' learning through synchronous communication tools.

Asynchronous and Synchronous Communications in EFL Learning

Numerous studies on the impact of asynchronous and synchronous communications on EFL academic performance have yielded inconclusive results. Hirotani (2006), for example, investigated the effect of synchronous and asynchronous CMC on improving oral proficiency among Japanese learners. Students preferred face-to-face communication over the other two modes, but synchronous CMC helped them achieve higher oral syntactic complexity than asynchronous CMC. Moreover, Al-Jabri (2012) conducted a study to investigate how online synchronous and asynchronous course formats influenced the academic development of 82 undergraduate students. The findings revealed no significant difference in the enhancement of grade level and English proficiency level between these two online course formats, although students could learn new materials through communication with others. Furthermore, students prefer the online synchronous format over the asynchronous format because it provides a more flexible and interactive learning environment. Skylar (2009) compared the performance and satisfaction of 44 preservice general education and special education students who participated in a hybrid course that used online asynchronous and synchronous learning environments. According to the findings, both types of lectures were effective in delivering online instructions. Nonetheless, most students stated that they would prefer synchronous learning over asynchronous learning because the former allows for more interactivity, and the learners' satisfaction with using technology improved.

In addition, Chau (2017) compared student interactions in synchronous versus asynchronous CMC systems. The findings revealed that synchronous interactions account for more social-emotional interactions than asynchronous ones. Students spent more time in task-oriented interaction during asynchronous communication than in synchronous communication. Students who followed the student-centered communication guidelines were able to encourage full participation in an online seminar. In a quasi-experimental study, Hsieh and Ji (2013) investigated the effectiveness of computer-mediated synchronous and asynchronous communication forums in reading comprehension performance with 138 non-English college majors in Taiwan. Pre- and post-reading comprehension tests and a post-perception survey were used as research instruments. The findings showed no significant difference in reading posttest scores between the synchronous and asynchronous groups. The perception survey results also revealed no significant difference between the two groups. Nevertheless, both groups express similar positive attitudes toward aspects of CMC collaboration and CMC effects, which are effective in supporting improvement in reading posttest scores.

Despite the prevalence of online CMC, research on online communication has focused on issues such as learner completion rates, learner satisfaction, and differences between online and face-to-face learning (Goggins & Xing, 2016). To our knowledge, only a few studies have focused on the impact of asynchronous and synchronous communications on EFL reading ability. Furthermore, previous research has yielded mixed findings regarding the effect of online communication on student learning (O'Rourke & Stickler, 2017). For example, Cheng et al. (2011) discovered a significant relationship between student final grades in an online class and the number of discussion board postings made by students during the intervention. In other studies, students reported that discussion board postings add little value to their understanding of the course content (Reisetter & Boris, 2004). Given the time and effort required to create and maintain the online discussion board, it is critical to continue testing its value to student learning, such as using online peer communication modes effectively and improving students' reading performance in such collaborative learning environments.

METHODS

Participants

This research was carried out throughout an 18-week senior reading course for English majors at a private university in Southern Taiwan. In spring 2019, students in this required course, Reading Seminar, met once a week for two hours. The primary goal of this course is to help students develop effective reading skills and the clear thinking required for more advanced reading comprehension. There were 100 seniors in total, with 34 males and 66 females. The students' ages ranged from 20 to 24, with a mean of 22.61 years (SD =.788). All participants were enrolled in two classes of the required English reading course taught by the same instructor (who was also the researcher). The researcher assigned class A ($n = 50$) to the asynchronous group and class B ($n = 50$) to the synchronous group randomly. All participants were required to take the online simulated TOEIC (an English communication skills test) at the start of the 2020 spring semester to ensure that these two groups had comparable levels of reading proficiency. Only the reading section score was taken into account for this study. The students had 75 minutes to answer 100 questions (the maximum reading score is 495 points). The asynchronous and synchronous groups' mean scores were 243.13 ($SD = 64.95$) and 199.29 ($SD = 74.90$), respectively, with no statistically significant difference between these two groups ($F = .971$, $p = .327 > .05$). This finding revealed that students in both groups had comparable levels of reading proficiency prior to online CMC interventions.

Instruments

Material

This study used 10 expository texts (approximately 1000 words each) from the book *Ten Steps to Improving College Reading Skills* (Langan, 2005). The book presents ten reading skills widely recognized as essential for basic and advanced comprehension, such as understanding vocabulary in context, recognizing main ideas, identifying supporting details, making inferences, identifying an author's purpose and opinions, and evaluating arguments. The texts were chosen and given to the participants based on several criteria. They included real-world newspaper and magazine articles

about job interviews, computer cultures, solar storms, travel adventures, other topics, and practice exercises.

Reading comprehension tests

Both groups were given a 10-item multiple-choice test to assess their comprehension of the reading material. Each test was designed to correspond to a reading article from the book *Ten Steps to Improving College Reading Skills* (Langan, 2005). Ten reading comprehension tests were used to estimate students' reading comprehension, with a maximum score of 10 for each test. To assess content validity, two English instructors from the research site's Department of Applied English were asked to revise the test items to make them more appropriate and content based. A pilot study with four students from a similar-level class was conducted to ensure that each item was fully understandable.

Asynchronous communication tool

This reading course used Moodle as the web-based media for asynchronous peer communication. Moodle is a free and open-source software platform for managing e-learning websites and applications (Moodle, 2007). According to Hsieh and Ji (2013), Moodle has the potential to engage students in active and collaborative communications outside of the classroom, resulting in an effective learning environment. As a result, Moodle was made available for free at the research site and was chosen as the asynchronous mode platform for online peer communication.

Synchronous communication tool

This study used WeChat as the synchronous communication tool for instant message communication. According to Guo and Wang (2018), the WeChat platform pushes reading materials to English majors, and their study discovered the efficacy of this mode of learning, including students' improved reading ability and facilitated technical communication among WeChat groups as an academic field in China (Ding, 2019). Lin, Qin, and Guo (2016) also discovered that WeChat-supported learning could improve college students' self-efficacy in English learning. As a result, after reading articles assigned by the instructor, the synchronous group used WeChat as a virtual community to post words, start online instant communications, ask and answer questions, share information and knowledge, and develop a reading comprehension activity.

Online questionnaire

Hsieh and Ji's (2013) questionnaire was used to elicit students' perceptions of the effectiveness and shortcomings of online peer communication modes. The online questionnaire included 28 items measuring two broad categories: asynchronous communication via Moodle (14 items) and synchronous communication via WeChat (14 items). Four students were randomly chosen to conduct a pilot study to ensure that each item was fully understandable. Cronbach's alpha was also calculated to assess the dependability of the asynchronous and synchronous questionnaire items. The overall alpha value for the questionnaire items was .866. The reported reliabilities for each subsection were .871 for asynchronous communication and .855 for synchronous communication. These findings supported the hypothesis that the questionnaire survey was reliable for assessing asynchronous and synchronous communications in EFL reading. One open-ended question was proposed to elicit participants' perspectives on the benefits and drawbacks of online communication tools to improve their reading ability.

Data Collection Procedures

Both groups of students were divided into 12 groups of four to five people. Students were allowed to choose their group members to avoid potential stress from working with peers they did not know well (Hu, 2005). Participants were required to read 10 articles assigned by the instructor (one per week) without any formal instruction. The goal of this exercise was to get students used to asking their peers questions if they did not fully understand the articles' content. Another reason for doing this online CMC task was that most students did not have many required courses in their senior year and thus had few opportunities for face-to-face discussions.

After completing each CMC reading task, all participants were given a written comprehension test prior to their regular class meeting. The instructor electronically joined each group discussion to be aware of students' exchanges and, if necessary, to correct any misleading messages during the entire online reading task communication process. A series of trainings for reading skills, peer communication, and asynchronous and synchronous communications were administered to improve the effectiveness of the CMC tasks.

Training for reading skills

As previously stated, the book *Ten Steps to Improving College Reading Skills* (Langan, 2005) was used in this study because it employs a series of trainings to help students carefully consider basic content and thus strengthen their understanding of the selected articles. The instructor first focused on the six basic skills involving the more literal levels of comprehension to help students develop effective reading and clear thinking, such as understanding vocabulary in context, recognizing main ideas, identifying supporting details, and understanding examples-based relationships. The remaining skills covered more advanced critical levels of comprehension, such as differentiating between facts and opinions, making inferences, determining an author's purpose and tone, and evaluating arguments. In a nutshell, this course aims to teach students key reading skills that will help them become better independent readers and thinkers.

Training for peer communication

The use of scaffolded reading among peers has demonstrated higher-level achievement in EFL reading to facilitate the goal of helping students read more productively and gain a fuller understanding of the text (Fitzgerald & Graves, 2005). As a result, the instructor must train students on how to improve their understanding skills through peer communication. Following an explanation of reading skills, the instructor presented an article, asked a text-based question, and then guided students on how to use multiple reading strategies such as understanding vocabulary, predicting reading content, identifying and skimming for main ideas, scanning for information, and drawing conclusions about the correct answer. The instructor then asked each student to pose three text-based questions and discuss them with their group members to find correct answers. The questions could be ones that the participants did not understand or ones that they asked to make their peers think deeply. The main goal was to encourage students to verbalize their thoughts and interact with their peers to arrive at a satisfactory answer. The goal was for students to benefit from peer interaction rather than teacher interaction. However, if peer communication became confusing or ineffective, the instructor was required to step in.

Training for asynchronous communication

After becoming acquainted with the peer communication process, students had to complete 10 asynchronous peer communication tasks after reading 10 assigned articles before the next class meeting. The articles were posted in Moodle's discussion section, which also served as an asynchronous platform for peer communication. For each asynchronous communication task, students had to log into Moodle with their usernames and passwords and collaborate with four to five group members. Students in the asynchronous group were required to read the assigned articles and respond to three text-based questions from the course materials or outside-of-class answers. Peers were then required to respond to the questions at least twice a week to meet the needs for effective communication and interventions in asynchronous learning (Chen et al., 2008). The number of message exchanges by individual students was later collected to track students' frequency of participation in the asynchronous communication activity.

Training for synchronous communication

Students in the synchronous group were required to register using their real names and student IDs and to join a WeChat group of four to five members to receive instructions on how to use the WeChat platform and collect feedback from their peers. WeChat was used specifically as a platform to provide 10 articles (the same as the asynchronous group) for students to use in synchronous peer communication. Students were required to post three text-based questions from the course materials or answers from outside the class at least twice per week. The instructor would log in to the students' WeChat platform at least twice weekly to monitor synchronous communications. The number of message exchanges by individual students was also recorded later.

At the end of the study, an online questionnaire survey was used to collect participants' perceptions about using asynchronous and synchronous communication tools to improve their reading comprehension performance. Figure 1 depicts an overview of the instructional design.

Data Analysis

To answer the first research question, independent-sample t-tests were used to see if there was a significant difference in the number of message exchanges and

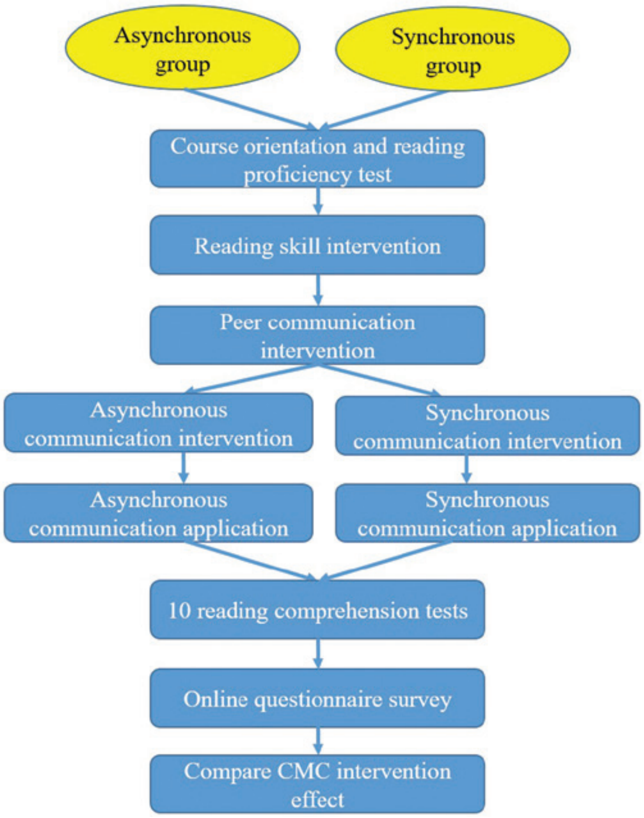

Figure 1. The instructional design for both asynchronous and synchronous groups

comprehension test scores when the asynchronous and synchronous communication modes were used. Pearson product-moment correlation analyses were performed for the second research question, which sought to identify the nature of the relationships between perceived asynchronous and synchronous communication use in the online questionnaire survey on English reading comprehension performance. Finally, descriptive statistics (mean, standard deviation, and frequency) were computed to investigate the perceptions of participants in the English reading course of the online communication applications.

RESULTS

Differences and Frequency of Asynchronous and Synchronous Communications on Reading Scores

Independent-sample t-tests were used to see if there was a difference in comprehension test scores and the number of message exchanges between asynchronous and synchronous communication modes. As shown in Table 1, the mean of the reading score obtained through the synchronous intervention (M=35.43, SD=10.44) was higher than that obtained through the asynchronous intervention (M=33.99, SD=10.80); however, the difference was not statistically significant (p= .236). According to this result, there was no difference in reading comprehension scores after synchronous and asynchronous interventions. Because the sample size was small, Cohen's d was used to calculate the effect size to increase the test's practical difference (Wilson Van Voorhis & Morgan, 2007). The effect sizes for reading scores were 0.14 based on the computation results (a small difference). Regarding the frequency of asynchronous and synchronous communication applications, there appears to be a significantly greater frequency difference between the synchronous intervention (M=10.45, SD=7.21) and the asynchronous intervention (M=7.85, SD=5.72), indicating that students used WeChat more frequently than Moodle while performing online CMC tasks. The effect size for the number of message exchanges was 0.40. It is concluded that students used synchronous communication mode more frequently than asynchronous mode, with a medium difference.

Table 1. Independent-samples t-test results

Variables	Mean	SD	*t*	*p*	Effect size	Cohen's category
Reading scores Asynchronous Synchronous	33.99 35.43	10.80 10.44	-1.20	.236	0.14	Small
Frequency Asynchronous Synchronous	7.85 10.45	5.72 7.21	-2.57	.013*	0.40	Medium

Note: * $p < .05$

Relationships between Asynchronous and Synchronous Communications on Reading Comprehension

To address the relationship between asynchronous and synchronous groups in the communication modes on reading comprehension performance, Pearson correlation coefficients were computed among the frequency of Moodle, and WeChat communication use and reading mean scores. First, the results revealed

a significantly positive correlation between reading scores and the frequency of Moodle communication ($r = .61$, $r^2 = 37\%$, $p = .000$). Thus, it is suggested that with increased asynchronous communications, students' reading comprehension scores via Moodle use increased as well. Regarding the students' synchronous communication, the results indicated a significant correlation between reading scores and the frequency of WeChat communication ($r = .40$, $r^2 = 16\%$, $p = .004$). As such, it is worth noting that as students increased their message exchanges through synchronous communication, their reading scores also increased.

Students' Perceptions of the Effectiveness of Asynchronous and Synchronous Communication Use

To thoroughly compare students' perceptions of the effectiveness of asynchronous and synchronous communications, their online communication conditions from the questionnaire survey should be carefully examined. As shown in Table 2, both groups of students agreed that CMC fostered a learning environment that assisted them in engaging in social interchange with peers and improved their reading comprehension. It is especially intriguing to note that there were two significant differences between these two groups on items 5 ($p= .046$) and 6 ($p= .008$). Most synchronous participants (72%) outnumbered the asynchronous participants (46%) in terms of preferring to discuss and work with peers. Furthermore, synchronous participants (80%) felt more at ease expressing ideas and asking questions than asynchronous participants (62%). Nevertheless, when asked to compare reading practice in the regular classroom (item 12) and traditional face-to-face communication (item 13) to online communication modes, approximately 40% of participants in both groups disagreed that such a CMC mode could provide greater effectiveness than those in the conventional learning mode.

The open-ended question was thoroughly analyzed to better understand the participants' perceptions of the benefits and drawbacks of using the CMC approach. Concerning the impact of asynchronous use, students provided numerous positive responses about using Moodle to improve their reading ability, as it provided a virtual environment to host communicative functions. "I enjoyed the online communication through Moodle because it helped me understand the text better and take tests with higher scores," one participant said. Furthermore, participants might take longer to write personal comments and express ideas, reducing anxiety caused by time constraints. In other words, students felt more at ease because they could take their time considering their responses. Some students, however, reported that such asynchronous communication slowed communication because senders might not receive messages immediately as they would with email. They were frustrated because they did not receive a notification when information was posted. Some students also complained about having to sign in with their username and password every time they visited Moodle.

With regard to participants in the synchronous group, they frequently expressed the convenience and ease of online peer communication using synchronous communication. Such communication provided a strong sense of immediacy, and students reported that they were more likely to pay attention in this online community. They interacted with their peers more and asked more questions, improving reading comprehension. One participant stated, "I could improve my reading comprehension ability through the feedback and comments received from my peers because I learned the content knowledge through communications with others or having peers explain something to me." Few participants, however, stated that their different learning rates made it difficult to share ideas on course materials. "Many of my group members did not prepare well and shared little course content, so I lacked [the] motivation to discuss with them," one student said. Furthermore, some participants complained that it took too long to receive their peer's returned messages or that they received no messages. They wondered if face-to-face communication would be preferable for more immediate communication.

DISCUSSION AND CONCLUSION

This study aimed to compare how asynchronous and synchronous communications affected students' reading comprehension ability in Taiwanese CMC learning environments. The research results reveal several noticeable findings for CMC applications.

First, the difference in EFL reading scores between asynchronous and synchronous communication

Table 2. Descriptive statistics of questionnaire survey

	Responses, N (%)							
Items	**Strongly agree**	**Agree**	**Average**	**Disagree**	**Strongly disagree**	**Mean (SD)**	***F***	***p***
1. Maximize involvement in reading articles								
Asynchronous	4 (8)	30 (60)	7 (14)	7 (14)	2 (4)	3.54 (.97)	2.296	0.133
Synchronous	9 (18)	20 (40)	10 (20)	8 (16)	3 (6)	3.48 (1.15)		
2. Have a positive experience								
Asynchronous	6 (12)	28 (56)	8 (16)	8 (16)	0	3.64 (.90)	0.064	0.801
Synchronous	5 (10)	34 (68)	4 (8)	4 (8)	3 (6)	3.68 (.98)		
3. Become a better reader								
Asynchronous	5 (10)	19 (38)	11 (22)	12 (24)	3 (6)	3.22 (1.11)	0.046	0.831
Synchronous	6 (12)	21 (42)	11 (22)	7 (14)	5 (10)	3.32 (1.67)		
4. Motivate to learn more								
Asynchronous	9 (18)	23 (46)	5 (10)	11 (22)	2 (4)	3.52 (1.15)	0.522	0.472
Synchronous	6 (12)	29 (58)	5 (10)	6 (12)	4 (8)	3.54 (1.11)		
5. Like to discuss and work with peers								
Asynchronous	4 (8)	19 (38)	9 (18)	15 (30)	3 (6)	3.12 (1.12)	4.088	.046*
Synchronous	7 (14)	29 (58)	5 (10)	7 (14)	1 (2)	3.69 (.96)		
6. Feel comfortable expressing ideas and asking questions								
Asynchronous	10 (20)	21 (42)	8 (16)	9 (18)	2 (4)	3.56 (1.13)	7.387	.008*
Synchronous	7 (14)	33 (66)	5 (10)	3 (6)	2 (4)	3.80 (.90)		
7. Prefer to use it in future English reading course								
Asynchronous	5 (10)	22 (44)	7 (14)	10 (20)	6 (12)	3.20 (1.23)	0.596	0.442
Synchronous	7 (14)	26 (52)	6 (12)	6 (12)	5 (10)	3.48 (1.18)		
8. Have a positive impact on reading								
Asynchronous	8 (16)	23 (46)	5 (10)	11 (22)	3 (6)	3.44 (1.18)	0.058	0.81
Synchronous	8 (16)	24 (48)	5 (10)	10 (20)	3 (6)	3.48(1.16)		
9. Enjoy the online group discussion mode								
Asynchronous	5 (10)	25 (50)	7 (14)	10 (20)	3 (6)	3.38 (1.10)	1.172	0.282
Synchronous	7 (14)	24 (48)	5 (10)	8 (16)	6 (12)	3.36 (1.26)		
10. Improve reading comprehension								
Asynchronous	4 (8)	23 (46)	10 (20)	10 (20)	3 (6)	3.30 (1.07)	2.251	0.137
Synchronous	8 (16)	18 (36)	8 (16)	11 (22)	5 (10)	3.26(1.26)		
11. Feel anxious during online discussion mode								
Asynchronous	3 (6)	9 (18)	1 (2)	25 (50)	12 (24)	3.68 (1.20)	0.163	0.688
Synchronous	2 (4)	11 (22)	4 (8)	21 (42)	12 (24)	3.60 (1.20)		
12. Give more effective reading practice than that in the regular classroom								
Asynchronous	4 (8)	18 (36)	6 (12)	18 (36)	4 (8)	3.00 (1.18)	2.194	0.142
Synchronous	8 (16)	19 (38)	4 (8)	12 (24)	7 (14)	3.18 (1.35)		
13. Participate more than that in the traditional face-to-face class discussion								
Asynchronous	6 (12)	19 (38)	3 (6)	15 (30)	7 (14)	3.04 (1.32)	0.029	0.866
Synchronous	4 (8)	25 (50)	4 (8)	7 (14)	10 (20)	3.12 (1.33)		
14. Help to learn a great deal from peers								
Asynchronous	6 (12)	27 (54)	7 (14)	7 (14)	3 (6)	3.52 (1.07)	.000	0.990
Synchronous	5 (10)	30 (60)	6 (12)	4 (8)	5 (10)	3.52 (1.11)		

Note: * $p < .05$

interventions revealed that the mean score obtained through the synchronous group was slightly higher than that obtained through the asynchronous group; no statistically significant difference, however, was found. This finding supports the findings of Al-Jabri (2012) and Hsieh and Ji (2013), who found no significant difference in reading scores between the synchronous and asynchronous interventions. Both modes of communication appear to be equally effective in improving reading comprehension. Despite this, a significant difference in the frequency of asynchronous and synchronous communication applications was observed, showing that students participated in synchronous communications more frequently than asynchronous communications. Although this study finds no direct relationship between preference and frequency of the two online communication modes, Skylar's (2009) findings suggest that students prefer synchronous learning over asynchronous learning because the former allows for more interactivity and immediate feedback.

Second, the finding indicates that increased asynchronous communications may help students develop significant and positive relationships in improving their reading scores via Moodle. This finding is consistent with previous research, such as that of Li et al. (2018) and Kent et al. (2016), who discovered that asynchronous communications are essential in increasing reading outcomes. The finding on the effect of synchronous communications also reveals that increased synchronous communications increase the students' reading scores. This finding supports Al-Jarf's (2014) findings that students can improve their reading skills through synchronous communication. Overall, the findings are consistent with previous studies that support online collaborative communications as an effective tool for developing students' reading comprehension, such as Hsieh and Ji (2013), Cummins (2008), and Lu and Chiou (2010); as students practice more in asynchronous and synchronous communication modes, their reading comprehension ability significantly improves. One possible explanation is that online communication requires students to share ideas with their peers, which helps them understand the course material. As a result, taking part in both online communication tasks may improve students' reading comprehension.

To shed more light on the relationship between students' perceptions and actual online communication conditions, the open-ended question results show that participants in the synchronous group have better perceptions of CMC than those in the asynchronous group regarding discussing with peers and feeling comfortable expressing ideas and asking questions. The synchronous communication platform offers a warm climate and greater ease, immediacy, convenience, and interaction (Al-Jarf, 2014). However, few students reported that late or unreturned messages from peers, as well as being unprepared for course materials, may have an impact on the effectiveness of the synchronous communication application. This finding is consistent with Ashley's (2003) study, which found that while synchronous communication provides students with immediate feedback when needed, peer passive engagement may be a barrier when using an online communication platform.

Students in the asynchronous group recognize the online communication platform as most useful when they write personal comments and answers to increase self-paced learning. This finding is consistent with Skylar's (2009) discovery that asynchronous learning provides ample time for responding and self-paced learning. However, the most common drawbacks mentioned for the Moodle application are the lack of notification when information is posted and the inconvenience of entering the username and password each time Moodle is accessed. This finding backs up Paulus' (2007) finding.

Pedagogical Implications

Despite mixed feelings about the effectiveness of online communications, students' responses to the open-ended question should be considered to maximize the benefits of the CMC task. To begin, instructors should work to resolve students' login issues on Moodle and monitor WeChat's chat box to make these two online tasks more effective and increase students' active participation. Second, according to Reisetter and Boris (2004), students tend to self-select their preferred learning mode. To increase students' motivation to engage in reading in online collaborative environments, reading instructors can consider balancing the two online communication modes based on individual learning preferences. Finally, as noted by Lang (2000), whether in synchronous or asynchronous communication mode, effective communication requires teachers to support students' participation in a dialogical process that results in increasingly sound, well-founded, and valid understanding of a topic or issue. To improve students'

reading comprehension, instructors should take the time to prepare reading materials for communication topics or issues, with clear guidelines and feedback deadlines.

Limitations and Future Research

This study aims to compare the efficacy of asynchronous and synchronous communication applications on EFL reading outcomes. The study's conclusion, however, is tempered by several limitations. The first limitation is that, as a rapidly emerging domain of technology applications, it is necessary to concentrate more on investigating the relatively new technological online tools. Although the WeChat communication platform is widely used in Taiwan, future research could incorporate more recent synchronous apps such as Teams or What's App. The second limitation of this study is that it only counts the number of student messages. To get a clear picture of students' responses and understanding of texts, future research should focus on the content of students' questions and answers and the time it takes to complete each CMC task. Furthermore, while this study only compares EFL students' reading comprehension performance, the other three language skills (listening, speaking, and writing) should be examined to comprehensively understand EFL students' online platform usage. Finally, generalizing the findings is difficult due to time constraints and the small sample size. As a result, a large sample size by comparing the three groups: an asynchronous group, a synchronous group, and a control group, could present a generalizable conclusion.

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Review of Four Books on Social Justice

By Heather Whitaker Alfonso

INTRODUCTION

The problems facing our age are tightly interwoven and require a spirit of ingenuity and cooperation on a global scale if humans are to survive the Anthropocene with security, dignity, and hope. Climate change, social injustice, growing economic disparity, rampant exploitation of people and resources, and the impacts of all these together have rapidly come to a head. Before you despair, consider some of the hopeful solutions from the books in this special series review.

Companies are stepping up to develop and adopt technology which reduces climate and environmental impact. They are sourcing sustainable components, and demanding providers comply with fair and equitable treatment of workers. Many of them are working on their own diversity and inclusivity practices. There is an increasing need for technical communicators to be an informed part of these strategies. Not only will they be crafting documentation of corporate response and initiatives, but technical communicators can help inform the conversation.

Science for a Green New Deal: Connecting Climate, Economics, and Social Justice

In this accessible, intelligent book, Eric A. Davidson explores the Green New Deal–US House Resolution 109–as a request for proposals and not a one-size-fits-all blueprint. The Green New Deal seeks solutions to the issues of climate change, social justice, and endangered natural resources. Davidson assumes the reader is not in denial about the overwhelming scientific consensus available regarding human impacts on climate and environment.

Throughout his book, Davidson appeals to the need for stakeholder cooperation and makes a plea for communitarianism—cooperation in problem solving for the greater good. He sees this necessary convergence as possible, if rife with struggles he admits he is not always qualified to address. Davidson calls for a sustainable and equitable capitalism, requiring cooperation from every sector of business, industry, and education, as well as community stakeholders.

Science for a Green New Deal: Connecting Climate, Economics, and Social Justice is recommended for those seeking to explore and incorporate non-partisan, science-based strategies and remedies to the major problems of climate change, environmental destabilization, and social justice.

This 264-page book is easily read in a weekend. Davidson mixes in a few relevant anecdotes and sharp wit in a book packed full of information. He does a great job of getting important scientific concepts across without technical jargon (technical communicators will appreciate this!). He explains why diversity, equity, and inclusion are crucial components of any sustainability strategy. Every chapter ends with specific, actionable, and globally relevant suggestions that flesh out the Green New Deal so that the aims it hopes to achieve are valid from a scientific standpoint.

Making Space for Justice: Social Movements, Collective Imagination, and Political Hope

Philosophical theory puts on walking shoes in this book by Michele Moody-Adams. The author tackles big ideas about sustainable democracy with a look at how those ideas transform into action. Written with scholarly attention to philosophical underpinnings, she demonstrates how important it is to learn from social movements. Although social movements have been historically neglected by philosophers, Moody-Adams believes an understanding of social movements is key to successful social justice work.

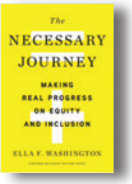
The author divides the book into three parts: understanding social movements, the role of collective imagination in social movements, and the importance of political hope to sustain them. She covers major social change events in the US and abroad, with her primary focus on the long, continuing history of Civil Rights in the United States.

Making Space for Justice: Social Movements, Collective Imagination, and Political Hope explores three primary tasks social movements face to create space for justice, and the history of methods used to accomplish those tasks. First, people must be convinced that there is injustice. They must then believe that a reasonable, efficacious

remedy exists. Finally, it must indeed be humanly and politically possible to accomplish that remedy.

This book is a must read for those interested in political philosophy, the history of social movements, sociology, or social justice work. Technical communicators are particularly suited for the kind of writing necessary to communicate the tasks of social movements mentioned above. Any technical communicator in the non-profit social justice space or related fields would benefit from this exploration of why and how humans drive social movements. While not a weekend read, the depth and breadth of Moody-Adams' work makes this a worthy volume to return to.

The Necessary Journey: Making Real Progress on Equity and Inclusion



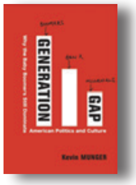
Ella F. Washington takes a narrative approach in her book on Diversity, Equity, and Inclusion (DEI). An expert on the subject, Washington tells the stories of nine different companies and their journeys toward DEI. She seeks to "demystify what DEI is about" (p. 5) and her narratives include the struggles, mistakes, and successes of the nine companies profiled in her book.

Washington traces the history of DEI from its Title II and Affirmative Action beginnings to today, when more companies are realizing that to survive, they must adapt to a changing workforce. Over 30 years since Diversity Management began, she writes, many companies are stuck in compliance mode. In other words, they are checking the boxes but not checking in with their workforce to make sure that progress is being made as intended. Washington mentions (more than once) that there is more to DEI than programs: it's a tough journey over the long haul. She skillfully argues that it is time for organizations to move beyond mere compliance, especially as workforces become more globalized. Washington addresses DEI issues across multiple cultural landscapes.

The author describes five stages of the DEI practice and application journey, and in each of her nine narratives she explores which of the stages the subject company is in. The layout of each story is nicely broken down into easily read chunks and sub-chapters, with a visual representation of the stage and its elements at the end of the story.

The Necessary Journey: Making Real Progress on Equity and Inclusion is interesting and inspiring, full of the hopeful tone woven through most of the books reviewed here. It will be very useful to those technical communicators developing internal user experience tools in companies which are investing in DEI strategies. Readers hoping to put the examples to practical use will need to plan to spend some time studying the cases to pull out useful strategies that apply to their situation.

Generation Gap: Why the Baby Boomers Still Dominate American Politics and Culture



Kevin Munger has crafted a fascinating look at why the Baby Boomer generation still holds sway in American politics and culture. Historically, older generations become less impactful as they age, but Munger shows how a combination of events has changed that structure and revealed new weaknesses in a representative democracy. In the first part of *Generation Gap: Why the Baby Boomers Still Dominate American Politics and Culture*, he describes the historical factors at play in the Boomer generation's continued power. In the second part, he explores these facts in terms of the ensuing generational conflict.

According to Munger, a key issue is not that Baby Boomers have tremendous political and cultural clout. The problem is the generational conflicts that result as both the Millennials and Generation Z face underrepresentation and a much less stable economic future than Boomers were handed. Munger feels that these conflicts will only continue to increase over the next decade.

In his conclusion, Munger offers some educated predictions about the coming decade. While it might not be possible to produce actionable next steps readers might want, his intention is that this book "helps me understand the world in ways that other frameworks and evidence bases do not…" (p. 166).

Munger is a political and social data scientist, so his book is strong on numbers, with lots of illustrative graphs for those who like visuals. Technical communicators from all fields will appreciate Munger's analysis because his book shines a light on the sometimes confusing and frustrating intergenerational interactions of daily life. That is, *Generation Gap* may help us understand each other better.

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Review of Four Books on Social Justice

Justice. Johns Hopkins University Press. [ISBN 978-1-4214-4434-5. 264 pages, including index. US$27.95 (hardcover).]

Moody-Adams, Michele. (2022). *Making Space for Justice: Social Movements, Collective Imagination, and Political Hope*. Columbia University Press. [ISBN 978-0-231-20137-7. 346 pages, including index. US$28.00 (softcover).]

Munger, Kevin. (2022). *Generation Gap: Why the Baby Boomers Still Dominate American Politics and Culture*. Columbia University Press. [ISBN 978-0-231-20087-5. 216 pages, including index. US$29.99 (softcover).]

Washington, Ella F. (2022). *The Necessary Journey: Making Real Progress on Equity and Inclusion*. Harvard Business Review Press. [ISBN 978-1-64782-128-9. 310 pages, including index. US$30.00 (hardcover).]

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Heather Whitaker Alfonso is a student at the University of Alabama in Huntsville pursuing a graduate degree in English with a Technical Writing Certificate. She holds a Master's in Social Work and is a student member of STC.

Table 1: Books on Social Justice Compared

	Science for a Green New Deal: Connecting Climate, Economics, and Social Justice	Making Space for Justice: Social Movements, Collective Imagination, and Political Hope	Generation Gap: Why the Baby Boomers Still Dominate American Politics and Culture	The Necessary Journey: Making Real Progress on Equity and Inclusion
Audience	General	Scholarly, Academic	General, Business	General, Academic
Major Strengths	• Easy-to-read and understand without jargon • Solutions-focused • Encourages diversity of approaches and broad inclusion of stakeholders • Aware of minoritized communities and barriers to participation • Well laid out formatting with minimal unnecessary repetition	• Thoroughly details the "why" of social justice • Fair and balanced look at social movements and recent volatile historical events • Strong on philosophy and history of social movements	• Ample case studies with examples of practicable action steps • Includes an appendix with detailed DEI graphics from the company narratives • Next steps for organizational leaders and those who shape internal policy	• Data-driven and comprehensive • Lots of graphs for visual representation • Straightforward and easy to digest in a weekend, the reader will likely want to keep this one on the shelf and stay tuned for updates
Major Weaknesses	• Connecting climate change to social justice impacts could use expansion • Dismissive of anti-science, anti-government stances	• Contains a good deal of jargon • Often reads like a dissertation	• Not a one-size-fits-all guide so it's short on practical skills, but provides a starting place and ample ideas in the case studies	• Pulls no punches in assigning much of the decline of US democracy to Baby Boomers
Comments	Refreshingly optimistic; you will be better educated on some very important topics while cognizant of viable, realistic solutions.	A thorough, ultimately hopeful look at the political philosophy behind social justice movements.	Especially useful to policy developers in organizations and companies committed to improving their DEI strategies	Very helpful in explaining much of the rapidly changing dynamic of US politics and culture from a social/political science perspective
Rating (5-star scale)	*****	****	*****	*****
Cost (USD)	$27.95	$28.00	$30.00	$29.99

Books Reviewed in This Issue

The reviews provided here are those that are self-selected by the reviewers from a provided list of available titles over a specific date range. Want to become a book reviewer? Contact Dr. Jackie Damrau at jdamrau3@gmail.com for more information.

From Solo to Scaled: Building a Sustainable Content Strategy Practice

Natalie Marie Dunbar. 2022. Rosenfeld Media. [ISBN 978-1-933820-57-6. 220 pages, including index. US$49.99 (softcover).]

From Solo to Scaled: Building a Sustainable Content Strategy Practice by Natalie Marie Dunbar is a book that is sure to be deeply appreciated by its admittedly niche audience—those who are tasked with establishing or growing a content strategy practice. I'm fortunate enough to work at a company that lives and breathes content strategy, so I don't need to convince my boss about its importance. Many people, however, find themselves in workplaces where they may be the only one even familiar with the "content strategy" term. Dunbar's book is a compassionate guide for such a reader who needs to boldly step into uncharted territory as a content strategy practice builder at their organization, whether that means scaling an existing team to meet growing demand or starting from scratch.

It's important to note that *From Solo to Scaled* is not a book about how to do content strategy, but rather how to erect the organizational scaffolding necessary to sustain and manage the growth of a content strategy practice. Although this kind of work sounds to me like "ContentOps," the term does not appear in the book's index, and I wish I could have understood how Dunbar views her advice in the context of this trending idea in the field.

The book consistently delivers helpful samples and figures to inspire the reader. The second chapter, "Structural Alignment," provides a clear sample charter for a concept I had been unfamiliar with, a "Content Strategy Community of Practice," which can act as a possible intermediary step before embarking on establishing a full-fledged content strategy practice (p. 45). The third chapter, "Building Materials," demonstrates how to create a reliably repeatable and scalable end-to-end content strategy lifecycle "Process Framework." The fourth chapter helps the reader scale and expand their practice's capabilities by highlighting the various sub-disciplines and competencies within content strategy that will need to be incorporated. There is a helpful sample "Growth Mitigation Strategy" table on pages 92–93 that demonstrates how one can categorize and size content strategy projects by their complexity and necessary phases, approaches, and methodologies.

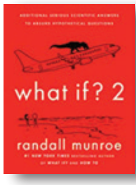
Throughout the book, Dunbar is careful to not assume a "one-size-fits-all" approach to her advice. However, in her advice to configure the strategies to what's relevant to the reader's own practice (p. 93), there is an acknowledgement that a guide such as *From Solo to Scaled* can only take the reader so far, and at a certain point it is up to them to pick and choose which advice makes sense given their situation. Readers should not expect to have their hand held all the way through the unavoidably ambiguous, difficult, and highly individualized work of establishing a content strategy practice at any organization.

Josh Anderson

Josh Anderson, CPTC, is an Information Architect at Precision Content. Josh was an English teacher in Japan and an SEO Specialist in the Chicagoland area before earning a Master of Information at the University of Toronto.

What If? 2: Additional Serious Scientific Answers to Absurd Hypothetical Questions

Randall Munroe. 2022. Riverhead Books. [ISBN 978-0-525-53711-3. 368 pages. US$30.00 (hardcover).]



I have long been a fan of Randall Munroe's work, stemming from his excellent webcomic *xkcd*. Munroe, an engineer-turned-cartoonist, has a knack for seamlessly integrating physics, statistics, and logic into his comics in a way that remains accessible and educational. He has brought this skill to his non-fiction writings, including his newest work, *What If? 2: Additional Serious Scientific Answers to Absurd Hypothetical Questions*. This book, like its predecessor, is adapted from a segment of *xkcd* where Munroe answers fan-submitted questions about our world. The result is an entertaining journey throughout the many domains of science and math.

What If? 2 features 64 main questions and several "short answer" sections. The questions vary wildly in scope and topic, ranging from geology (can you make a lava lamp out of actual lava?) to civil engineering (how many men would it take to literally build Rome in a day?) to law (how long would it take to read every law applicable to you?). Many questions were submitted on behalf of children (such as, "what if the solar system was filled with soup out to Jupiter?")., Munroe seems

to take pride in answering these types of questions, perhaps to foster scientific interest in young people. He also has an appreciation for the absurd, and many of his answers discuss the calamities that would ensue from each question. For instance, when discussing the soup question, he describes in detail how the amount of mass needed for the soup would collapse into the Sun and form a black hole, and eventually “the black hole of soup would start slurping up the rest of the Solar System” (p. 4). A dark sense of humor pervades these questions, particularly when Munroe explains in precise detail how our galaxy would be destroyed from something seemingly benign.

What If? 2’s greatest strength is this sense of humor. The book is eminently readable, and the comedy balances the technical information to keep readers engaged. Munroe doesn’t explain every calculation or scientific phenomena, which may bother some readers, but he does an admirable job describing how he approaches most of the book’s questions. The result is a book that perfectly exemplifies technical communication for the masses. Munroe covers concepts such as atomic structures, exponential growth, and even special relativity in entertaining and informative ways that most readers can grasp.

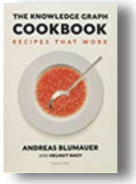
What If? 2 takes joy from exploring the niche cases of science. Indeed, this book reads like a particularly extreme episode of *MythBusters*, devoted to bombastic yet theoretical tests that could never be conducted in real life. Throughout it all, Munroe highlights the joys of science and the drive needed to seek out the answers to seemingly impossible questions. I wholeheartedly recommend this book to anyone that shares this drive. *What If? 2* is a hilarious, fascinating book that overflows with clever examples of technical communication.

Nathan Guzman

Nathan Guzman is a graduate student studying technical communication at the University of Alabama–Huntsville. His background is in aerospace engineering with plans of becoming a full-time editor upon graduation. Nathan is an avid reader with interests in reading anything that expands his knowledge of the world and how it works.

The Knowledge Graph Cookbook: Recipes That Work

Andreas Blumauer and Helmut Nagy. 2020. edition mono/monochrome. [ISBN 978-3-902796-70-7. 256 pages. US$32.00 (softcover).]



Like a delectable meal that is a feast for both the eyes and stomach, the visual design of *The Knowledge Graph Cookbook: Recipes That Work* is sumptuous. The tables and graphics are understandable, informative, and colorful, and serve to lift text that is complex and technical. The overall book layout is a masterclass in technical communication document design. Whether all kudos belongs to Härtig, the cover artist and layout designer, or in combination with authors Andreas Blumauer and Helmut Nagy, adding this book to your bookshelf as an excellent example of design is a must. Regarding its addition as an excellent source of knowledge graph information, that is less clear. Why? Because it still feels technical and perhaps there is no way around that when it comes to knowledge graphs and their relationship to “data governance, metadata management, and data enrichment, and … data integration technology” (p. 2). It is, by its nature, technical and complex.

Blumauer and Nagy do not skimp on the book’s contents. You will leave satiated. This is a thorough exploration of knowledge graphs that begins with a brief history, includes core concepts, basic principles, methodologies, life cycles, and best practices, and ends with a look into the future and what is next in terms of graphs. Having worked with organizations to create and implement knowledge graphs, the authors tackle the hard issues around organizational culture roadblocks and the various role-based personalities that can add to or subtract from knowledge graph successes in a section of the book smartly titled “Personas: Too Many Cooks” (p. 76).

Readers will appreciate the expert opinion interviews included by the authors. “Good chefs regularly visit other restaurants for inspiration. We have asked experts working in the field of knowledge graphs and semantic data modelling to comment on their experience in this area. They have worked with various stakeholders in different industries, so that you, dear reader, may further develop your understanding of the topic” (p. 162). These perspectives round out approaches to knowledge graphs and how they can be used effectively in organizations with stakeholder buy-in. The list of frequently asked questions at the end of the book, while not exhaustive, is also helpful to readers

ready to launch their knowledge graph journey using the ingredients pulled together by Blumauer and Nagy.

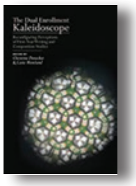
While *The Knowledge Graph Cookbook* is a great accompaniment to readers familiar with knowledge graph concepts, those newer to the field or less technically savvy may need some additional cooking instructions and training to achieve a full feast. Like a fine wine paired with a great meal, this cookbook is best paired with some instructor-led training and hands-on practice.

Liz Herman

Liz Herman, PhD, is an STC Associate Fellow and a knowledge management practitioner and is certified in project management and technical communication. She works as a senior manager for a large consulting firm.

The Dual Enrollment Kaleidoscope: Reconfiguring Perceptions of First-Year Writing and Composition Studies

Christine Denecker and Casie Moreland, eds. 2022. Utah State University Press [ISBN 978-1-64642-252-4. 270 pages, including index. US$33.95 (softcover).]



A kaleidoscope uses angled mirrors to make patterns, no two of which are exactly alike. Likewise, views regarding dual enrollment (DE) vary by the student, schools, and those who teach. This book's editors, Christine Denecker and Casie Moreland, use thoughts presented by the writers of fourteen papers to consider location and mode of delivery aspects covering DE.

- Educational Training Issues
  - **Senior year at High School versus College Freshman year.** Location and grade level have often been considered. Chapter 10 discusses current and normal.
  - **Credits.** Will credits be applied at college level; which school will this be determined? (See Chapter 11 for this discussion).
  - **Beyond College English Preparation.** Besides basic English and grammar, what other aspects of writing should be taught? High school is responsible for business level teaching according to Chapter 12.
  - **Teacher Skills.** Who decides what teachers should have for experience? Are they to blame if students lack success? (See Chapter 14 for this discussion).
- Gap Deficiencies.
  - Racial and Social Concerns are covered in Chapter 1.
    - If basic English and grammar are the only topics, could this create racial and social concerns?
    - Would it be more useful for minority students to stress these at an earlier grade level?
- Other Important Training (Not Discussed)
  - **Personal Reading.** This is a source of training for many writers.
  - **Library Usage.** Important for teaching research abilities to students. Also, a resource for demonstrating company guidelines to follow.

This book may prove more valuable for those in the educational field. Good basic writing skills must be developed somewhere before the corporate world. And development of these skills should begin the sooner the better. We technical communicators probably agree wholeheartedly until this point.

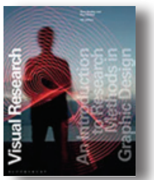
The editors and their contributors, however, challenge us to consider what is really happening in the educational world and how it could be improved. Such an important subject deserves input from various writing groups. Our opinions are valuable because every technical communicator personally experienced training somewhere, even those who did not have DE available as an option.

Donna Ford

Donna Ford has been an STC member and a technical writer in the hardware, software, IT, and government healthcare industries. She holds an Information Design certificate from Bentley College. Donna is an author who also has reviewed trade books online for the US Review of Books.

Visual Research: An Introduction to Research Methods in Graphic Design

Russell Bestley and Paul McNeil. 2022. 4th ed. Bloomsbury Visual Arts. [ISBN 978-1-3501-6056-9. 256 pages, including index. US $44.95 (softcover)]



If you were given a single text, an amazingly designed and insightfully thorough text, which would walk you through the vast topics of visual design from research pedagogy to synthesis, then

you would be holding a copy of the stunning 4th edition of *Visual Research: An Introduction to Research Methods in Graphic Design* by Russell Bestley and Paul McNeil.

First published in 2004, the latest edition includes over 300 color illustrations of art and design processes. The book has evolved into a tour de force on topics ranging from structuralism and semiotics to gestalt and the politics of design. The writing is dense and uncompromising, this is not a coffee table "browser" though it might be mistaken for such given the superb quality of the paper and printing.

The opening quote from Chapter 5, Theory in Practice, excellently represents the analytical depth that is pervasive throughout the volume: "Contemporary graphic design is not always concerned with problem-solving. The exploration of a theme and the graphic response to that theme is a core part of the research agenda. In effect, this places the design methodology itself as a central component of the design process" (p. 121).

One of the important strengths of *Visual Research* is the inclusion of case studies, nineteen in total, linked to each chapter's contents and reflecting those concepts and their application in real world design scenarios. Case Study 12, "The English Difference," is a perfect example. The design concept (by Gemma Dinham) reflects the common British use of irony and self-deprecation as a standard form of humor by creating cloned parodies of favorite alcoholic drinks; beautifully labeled and designed containers with names such as "Detachment" and "Cynicism." Thus, she holds up a sarcastic graphic design mirror to the very British relationship between class, social etiquette, and alcoholic drinks. This neatly epitomizes the essence of visual research.

Working through the chapters, one appreciates the nearly 20 years of revisions and improvements that have led to this fourth edition. The flow of ideas and visuals within each chapter and throughout the text reflect the authors honed experience. As an aside, there is an excellent "Key Concepts" final chapter and an eminently useful directory of terminology for students, teachers, and researchers.

The immense amount of visual material, and the text's refined nature, make this a very difficult book to synopsize. This is a heavy book (good paper and all), and its substantial physical heft is paralleled in the mass of its contents. It takes a committed reader to handle page after page of graphic iterations and text saturated with insightful quotes by prominent designers and authors. In short, it's a challenging text; this is the ultimate compliment!

Lynne Cooke
Lynne Cooke is a Clinical Assistant Professor at Arizona State University where she teaches courses on usability, digital media, and portfolio development. She is also a member of the Arizona Chapter of STC and the Internship Coordinator at ASU.

Disabilities and the Library: Fostering Equity for Patrons and Staff with Differing Abilities

Clayton A. Copeland, ed. 2023. Libraries Unlimited. [ISBN 978-1-4408-5907-6. 508 pages, including index. US$60.00 (softcover).]

Disabilities and the Library: Fostering Equity for Patrons and Staff with Differing Abilities addresses the challenges in providing universal access to library patrons and community members. Many of its strategies can be applied broadly across a range of communication and educational disciplines.

The chapters are written by diverse professionals: information scientists, engineers, administrators, and of course, librarians. Many are also differently abled. However, common themes emerge. The biggest takeaway is that accommodating differently abled individuals is integral to the mission of a library—information access for all—but in practice, accommodations improve the library experience for everyone.

Parts I and II provide a brief history of disability rights and an introduction to the visible and "hidden" disabilities library staff may encounter from mental illness, dyslexia, and neurodevelopmental disorders like ADHD and autism spectrum disorder to more traditionally defined disabilities including blindness and deafness. The most basic step is for staff to have readily available contact information for local services and directions to online resources. Additional steps can serve multiple populations at once: providing materials in "multiple modalities," such as an audiobook and book format simultaneously, can improve fluency for readers with dyslexia but also serves those with low vision (pp. 103, 126). Clear signage in the physical space also benefits all patrons: signs should be large print with high contrast between text and background, and color-coding should be supplemented with clear icons for the color blind.

Parts III and IV explore creating inclusive collections, programming, and spaces, both physical and digital. Inclusive collections include materials that portray persons with disabilities in an authentic way, allowing younger patrons to see themselves represented on the page or screen. Inclusive programming might include adaptive storytime with a multisensory approach: "Using tactile tools like story boxes or baskets, which contain tactile manipulatives that represent characters and items in the story can help reinforce comprehension" (p. 281). The physical environment must also be inclusive. Design considerations should extend beyond legislative minimums like wheelchair ramps to consider universal design that will improve the experience for all patrons. The library is not a place for architectural frills: unexpected or oddly shaped stairs, cavernous atriums, and ill-placed skylights put patrons on edge. Navigable spaces with minimal obstacles benefit everyone.

Chapters 16 and 17 about online accessibility are applicable to all communication professionals. Since a website is often a person's first experience, adhering to web accessibility standards is critical for accommodating all populations: use consistent heading and subheading architecture to structure content, provide alt text for images, and use CSS and other techniques to make your design responsive to resizing. Content must be formatted in accessible ways; videos should be captioned; PDFs should be tagged to be compatible with screen readers; and website structure must be simple and clear.

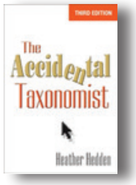
Part V explores developing a diverse library staff through inclusive hiring practices and attitudes. Administrators should recognize that persons with disabilities can provide unique insight into the experiences of patrons with disabilities.

Disabilities and the Library offers an introduction to creating inclusive physical and digital environments. Many accommodations for persons with disabilities benefit larger populations. I would recommend *Disabilities and the Library* to librarians and those in related technology fields, as well as anyone interested in accessibility and disability activism.

Bonnie Winstel
Bonnie Winstel is the Assistant Manager of Software Development for Book Systems, Inc. in Huntsville, Alabama. She received her master's degree in English and Technical Communication at the University of Alabama-Huntsville in 2013.

The Accidental Taxonomist

Heather Hedden. 2022. 3rd ed. Information Today, Inc. [ISBN 978-1-57387-586-8. 514 pages, including index. US$47.50 (softcover).]



As Stephanie Lemieux says in her foreword, this text "covers much of the new ground taxonomists need to be aware of for modern practice" (p. x). It's presented, once again, in a manner practical, useful, and substantive.

The first four chapters ("What Are Taxonomies?," "Who Are Taxonomists?," "Creating Terms, Concepts, and Labels," and "Creating Relationships") are thorough. Chapter 5, "Software for Taxonomy Creation and Management", covers the types of software available for creating and managing taxonomies as well as the benefits and features of dedicated taxonomy management software, and taxonomy/thesaurus/ontology software products.

Chapters 6 and 7 cover types of taxonomies: "Taxonomies for Human Indexing" and "Taxonomies for Automated Tagging and Categorization." Chapters 8–11 get into the nitty gritty of working with taxonomies: "Taxonomy Structures," "Taxonomy Displays," "Taxonomy Planning, Design, and Creation," and "Taxonomy Implementation and Evolution."

This third edition also includes a new chapter on ontologies, which provides a "high-level introduction to ontologies" (p. 421) and which I found fascinating. "Taxonomists often change jobs and industries," Hedden says (p. 407), so she also includes a section describing recommended methods for creating ontologies, including design approaches, combining taxonomies and ontologies, determining property types, management software, and ontology work. Some taxonomists/ontologists may be known as "Knowledge Modelers," she reports.

The last chapter, "Taxonomy Work and the Profession", gets into more career and professional development. The appendices include a survey of self-described taxonomists from various online groups, as well as a detailed Glossary, Recommended Reading, and Websites.

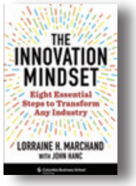
The index is comprehensive, detailed, and lengthy, so much so that it's in a much smaller font than the rest of the book and you may want to zoom in for readability—a reason to invest in an electronic as well as a printed edition.

Either way you purchase *The Accidental Taxonomist, 3rd edition*, it will be a worthwhile investment.

Pilar Wyman
Pilar Wyman, Chief Indexer at Wyman Indexing, has been writing indexes for over 32 years. She is a former STC member and a current member of the American Society for Indexing (ASI). Pilar works in English, Spanish, and French in public health, clinical medicine, med-tech, and other areas of personal interest.

The Innovation Mindset: Eight Essential Steps to Transform Any Industry

Lorraine H. Marchand with John Hanc. 2022. Columbia University Press. [ISBN 978-0-231-20308-1. 320 pages, including index. US$30.00 (hardback).]



The Innovation Mindset: Eight Essential Steps to Transform Any Industry is a well-written practical book for anyone interested in understanding innovation and learning how to apply an innovation mindset to identifying the problem around personal/business matter subjects and solve the problem as progressing the author's essential steps. The idea of an innovation mindset improves productivity and results in sustainable business.

Lorraine H. Marchand suggests observing three problems a day, diagnosing the right problem (p. 27, provides technique), and avoiding jumping to think about solutions instead of the problem. She also refers to Albert Einstein's quote and spends 91% of her time thinking about the problem and 9% thinking about the solution. I tried this approach the past month; it challenged me to think and identify the encountered problem around my personal and business matters in a different way. I started to tackle the problems that I listed in my notebook. These tactics helped me improve my problem-solving skills. The author also emphasized good ideas, including curiosity, passion for problem-solving and embracing changes.

In Chapter 3, Marchand describes the Minimum Viable Product (MVP) concept, which Frank Robinson introduced in 2001. The MVP concept provides benefits such as making reality from the idea, showing the product to the customer early and obtaining possible feedback on any early correction, and reducing costs and time. The author explains this with eight different MVP types and common testing approaches' techniques (pp. 62–64).

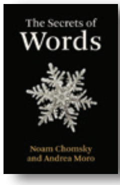
I enjoyed learning in Chapter 1 and 4 about McKinney's favorite killer Questions (p. 35), developing my killer questions and the law of one hundred customers, which provides the six best questions for hearing the customer voice. The author gives detailed directions with practical examples. In Chapter 5, the Pivoting terminology was emphasized along with its five reasons for using it (p. 99). I understand why pivoting is pivotal for success and finding the opportunity in terms of strategy. The following section of the book discovers six famous and successful pivots stories. The key is critical thinking.

Overall, *The Innovation Mindset* is easy to read and contains step-by-step approaches with many examples to help understand the innovation mindset. Readers can apply/transform their personal/ business situations.

Sam Lee
Sam Lee is an STC member and a Policies & Procedures SIG co-manager. Sam has a Master of Technology Management, Master of Electrical Engineering, and a Technical Writing Certificate at the University of Waterloo. He is currently a Senior Avionics Engineer where he designs avionics systems and writes aviation-related documentation.

The Secrets of Words

Noam Chomsky and Andrea Moro. 2022. The MIT Press. [ISBN 978-0-262-04671-8. 130 pages. US$17.95 (hardcover).]



For centuries, scientists and philosophers have contemplated how humans acquire language. Galileo, among others, was amazed "that with just a few symbols you can construct infinitely many thoughts" to convey to others the "innermost workings" of your mind (p. 40). And, for centuries, it had been thought that these symbols must be taught, that children must learn words from those who already know them, string them together in a way that makes sense to them, and convey that sense to others. But that idea began to be questioned in the 20th century.

In *The Secrets of Words*, linguist Andrea Moro interviews linguist Noam Chomsky about how the study of linguistics has changed, specifically in the quest for a solution to that centuries-old puzzle that Chomsky calls "a core problem of the study of language" (p. 40). Excitement started building in the linguistic community in the 1950s about a possible solution. Chomsky compares this to the current

excitement about the promise of technology. Linguists started applying scientific analysis to language, and eventually made the connection between language and neuroscience. Early 21st-century experiments demonstrated that, indeed, very young children don't learn language from what they hear, but from some internal language created in the brain. "Two-year-old children…ignore 100 percent of what they hear… in applying the rules of their internal language" (pp. 15–16).

How this happens is one of the secrets yet to be discovered. It is necessary to move beyond description to explanation. What happens in the brain can be described, but "*what* is the actual information one neuron passes to another" (p. 30)? Chomsky, who has done extensive research on the history of linguistics, discusses past theories and approaches, such as Galileo's thought experiments and 20th-century efforts to unify chemistry and physics, and how they may or may not apply to today's quest to unravel the intricacies of language. Although many mysteries remain unsolved, he does not believe analyzing masses of data by computer has yet to provide the answer to unifying neurosciences with the nature of language. Neurolinguist inquiries may, or may not, unlock the answers to this tantalizing secret.

As a nonlinguist, *The Secrets of Words* presented me with a look at a fascinating linguistic quandary. Despite the vocabulary of the conversation naturally tending toward linguistic terminology, I appreciated Chomsky's ability to make his statements clear to me, providing me an excellent lesson in technical communication. The book's conversation is followed by notes on Chomsky's work by Moro, one of his former students. For a reader unfamiliar with Chomsky's contributions to linguistics, it may be worthwhile to look at this before reading the interview.

Linda Davis

Linda M. Davis is an independent communications practitioner in the Los Angeles area. She holds an MA in Communication Management and has specialized in strategic communication planning, publication management, writing, and editing for more than 25 years.

The Rob Roy Kelly American Wood Type Collection: A History and Catalog

David Shields. 2022. University of Texas Press. [ISBN 978-1-4773-2368-7. 408 pages, including index. US$65.00 (hardcover).]

Rob Roy Kelly was a graphic designer, design educator, and noted historian, but perhaps his most significant contribution was his collection of "150 faces…and 18,829 pieces of wood type" (p. 01) that would become known as the Rob Roy Kelly American Wood Type collection. As the name states, *The Rob Roy American Wood Type Collection: A History and Catalog*, by David Shields, contains both a history of the wooden movable type in the collection, which is housed today at the University of Texas, but also a catalog of the collection. This book also tells the histories of Rob Roy Kelly himself and how he began the work of collecting, researching, and cataloging this essential part of our history which resulted in his notable publication *American Wood Type 1828-1900*.

Today wooden moveable type and their histories are solidly considered part of the graphic design history canon, but that wasn't always the case. Rob Roy Kelly began collecting wooden type in the 1950s–1960s when it was largely discarded as outdated technology. As Shields notes without the efforts of Kelly, who "fostered a broader acceptance of this…largely ignored, facet of American…history" (p. 01) it might have been forgotten forever.

Organized into five sections, *The Rob Roy American Wood Type Collection* includes an introduction, a collection of essays on Rob Roy Kelly and his work on the collection, the history of the collection including identification techniques and catalogs, an explanation of classifications of wooden type, and finally images of the collection. Shields highlights and acknowledges Rob Roy Kelly's incredible work in researching this history while also correcting it as necessary and expanding on it. Shields does an excellent job of explaining Kelly's research methods. This content could be used as a road map for investigating new histories on overlooked subjects as there was no established method for identifying and researching wooden movable type before Rob Roy Kelly's work.

Though the book is over 400 pages it is not a difficult read, and more than 300 pages of the book are the specimens themselves. Each specimen includes a short description of the type and an image to represent

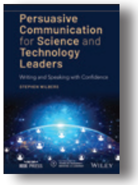
that typeface, whether it is a historic type specimen from a catalog or in some cases a photograph of the wooden types themselves. When possible, the catalog pages include the name of the typeface, its method of production, and which manufacturer(s) produced it, along with other descriptive and historic details.

The Rob Roy American Wood Type Collection is an extraordinary book that will be enjoyed by historians, design educators, and typophiles. The book is an excellent resource for anyone who is interested in the collection but perhaps unable to make a trip to visit it. It is a beautiful book and not only is it a testament to the significance of Rob Roy Kelly's work and to the significance of this important yet almost forgotten element of American history. As Shields reminds us, "The history of America…was printed in wood type" (p. 23).

Amanda Horton
Amanda Horton holds an MFA in Design and teaches graduate and undergraduate courses at the University of Central Oklahoma (UCO) in design history, theory, and criticism. She is also the director of the Design History Minor at UCO.

Persuasive Communication for Science and Technology Leaders: Writing and Speaking with Confidence

Stephen Wilbers. 2023. Wiley/The Institute of Electrical and Electronic Engineers. [ISBN 978-1-119-57322-7. 251 pages, including index. US$95.00 (hardcover).]



Persuasive Communication for Science and Technology Leaders: Writing and Speaking with Confidence is packed with excellent advice on both written and spoken communication, with clear explanations of their differences. Throughout, Stephen Wilbers emphasizes what I've always described as the editor's goal: to translate between the communicator's mind and their audience, thereby transmitting the essential message—in short, he reminds us to write with the reader, not exclusively the writer or their message, in mind. Refreshingly, he also reminds us of the growing modern audience who don't speak our language as natives or who speak it differently (e.g., MU.K. versus U.S. usage).

The book's structure is simple but effective, with a page layout and format that facilitate skimming. Chapters begin with a summary preview and end with highlights, questions to stimulate thought, and exercises to test our mastery of the principles, plus linguistic wordplay as a palate cleanser before moving on. The writing's friendly, informal, and prescriptive without being dogmatic. The chatty, relaxed style demonstrates Wilbers' belief that technical writing needn't be dry and lifeless. He's humorous and writes with tongue firmly in cheek ("The best way to impress your reader is to show off your knowledge.", followed by a description of why this is wrong; p. 58), though the humor's sometimes overdone and leads him astray ("Rhythm is…also for… birth control", p. 75).

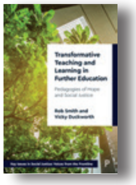
Scientific communicators have long known that any audience contains people who won't be persuaded by facts, clear writing, or an engaging style alone. Wilbers suggests we can resolve this problem through passionate, credible engagement that establishes our trustworthiness and acknowledges our audience's concerns and fears, but says little about what arguments might persuade those who find facts alone unconvincing. He notes, "Technological leaders need to do more than inform. They also need to persuade and inspire" (p. xxvi). But he provides no chapter on what makes an effective argument that can overcome resistance; there are hints implicit in his description of persuasion, but a chapter with a more explicit treatment would have improved the book. Although Wilbers reminds us of the importance of personalizing an argument, and the subjectivity of all writing, his suggestion to aim for rigor and objectivity to mitigate that subjectivity is insufficient.

You can read this slim volume quickly, but you'll benefit more if you take time to think through what Wilbers says and complete his proposed exercises. *Persuasive Communication* is a great starting point for beginners, a great refresher course for experienced communicators, and a solid addition to any writer's or editor's library. But it isn't the only style guide you'll need, particularly given the inadequate index. You'll still want larger references such as *The Chicago Manual of Style* to provide details of style.

Geoff Hart
Geoff Hart is an STC Fellow with more than 30 years of writing, editing, translation, and information design experience. He's traveled widely and worked with authors from many cultures. He's the author of two popular books, *Effective Onscreen Editing* and *Writing for Science Journals.*

Transformative Teaching and Learning in Further Education: Pedagogies of Hope and Social Justice

Rob Smith and Vicky Duckworth. 2022. Policy Press. [ISBN-978-1-4473-6233-3. 224 pages. $45.95 (softcover).]



Rob Smith and Vicky Duckworth based their book, *Transformative Teaching and Learning in Further Education: Pedagogies of Hope and Social Justice*, on conclusions from the Transforming Lives research project that provided an opportunity to "affirm the primary purpose of education" (p. 9). This research developed "case studies from colleges and adult education settings" (p. 10).

The authors looked at the research related to the impact of education and how it can be transformative as with testimonies from teachers and students. Smith and Duckworth argue that college and lifelong learning can have a positive impact on social justice issues not only for individuals, but also for families and communities. Consider these snippets from students about the positive impact education has had for them:

> "When you can't read and write out there, it's really hard. And it's scary. Now I can actually read and write and sign my own name. When I go to the doctor I can sign a note… You need education to learn about everything that's going on outside" (p. 76).

> "Given the opportunity to further myself, that's a no-brainer. But then coming to college, that first day, I was like: I'm not sure I can do this… It's changed me. I can do things. I am capable… Now I feel like I've got a bit of respect. It's definitely life-changing" (p. 84).

These snippets speak for themselves as does the following from a teacher:

> "I think she then made another change in me just kind of… from going there to get the course done for the sake of getting a qualification to actually wanting to learn and develop. I think it's one of the reasons I'm teaching as well because of the impact she had on me" (p. 92).

Students, teachers, researchers, and policy makers could find this book to be a valuable resource as the authors explain the sometimes not appreciated and not measured "holistic" benefits of further education.

Jeanette Evans

Jeanette Evans is an STC Associate Fellow; active in the Ohio STC community, currently serving on the newsletter committee; and co-author of an *Intercom* column on emerging technologies in education. She holds an MS in technical communication management from Mercer University and undergraduate degree in education.

Rewired: Protecting Your Brain in the Digital Age

Carl D. Marci, MD. 2022. Harvard University Press. [ISBN 978-0-674-98366-3]. 272 pages, including index. US$27.95 (hardcover).]

When you wake up, do you check your cell phone for email and messages? As you go through your day, do you check your schedule on your phone? Do you pay for your morning coffee with your smartphone? When you meet a friend for dinner, do you check your phone for directions to the restaurant? Think of how many times each day you check your cell phone. This didn't used to be the case.

In his book, *Rewired: Protecting Your Brain in the Digital Age*, Dr. Carl D. Marci, a leader in the fields of social and consumer neuroscience, describes how the digital age is affecting us. We are distracted. He warns that digital distractions can lead to death. There are serious incidents like texting while driving. Also, there are physical mishaps caused by being distracted. For example, Marci cites how a tourist died after slipping down steps while posing for a selfie. He also mentions the woman who fell into a water fountain inside a mall while walking and using her smartphone.

Dr. Marci points out, "We can access, and even create, media content while standing in line at the store, walking down the street, on break at work, or while sitting in a car, bus, train, or airplane" (p. 100).

Because we can access information later using the internet, we don't feel a need to remember it. Therefore, our brain alters the way we encode or store memories. And now, with our cell phones and hand-held devices, we are also becoming distracted during our day which may be hampering our sleep patterns. Also, we are less engaged with people and experiences than we used to care about. In fact, today's young adults have media attention spans significantly closer to those of three-year-olds than to those of adults. Everyone's brain,

from early childhood to adults, is being assaulted with a direct impact on our mental health.

In Chapter 9, Ten Rules for a Healthy Tech-Life Balance, Marci suggests we stop multitasking, pointing out, “When switching from multitasking to monotasking, we will quickly find that we are more focused, more productive, and more attentive to others” (p. 173).

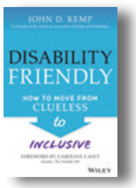
Another rule is to think before you post. Marci spotlighted a school district just minutes from my home, the Mounds View Public Schools, that created a mnemonic to help students to review their online comments before posting: T.H.I.N.K. Is the message True, Helpful, Inspiring, Necessary, and Kind? This pneumonic reminds us to consider actions and consequences before posting.

Having done brain research before entering the technical communication field, I found Marci’s focus on neuroscience to be eye opening. His book, which was easy to read, includes over 30 pages of references. I especially appreciated his tips chapter where he offers suggestions for better dealing with our digital age and the lure these devices have on our brains to affect our attention span, decision making, and the ability to build connections with others.

Rhonda Lunemann
Rhonda Lunemann is an STC senior member and a technical writer with Siemens Digital Industry Software. She serves on the STC Twin Cities chapter’s Program Committee and is a member of the MN (Minnesota) Bot Makers.

Disability Friendly: How to Move from Clueless to Inclusive

John D. Kemp. John Wiley & Sons, Inc. [ISBN 978-1-119-83009-2. 256 pages, including index. US$28.00 (hard cover).]



We would all like to believe that the companies we work for practice the diversity and inclusion hiring strategies they profess to support. After all, diverse employees lead to better ideas. Unfortunately, for many companies, the disability inclusive initiatives never make it from the policy stage to implementation. In *Disability Friendly: How to Move from Clueless to Inclusive,* John D. Kemp outlines how businesses can construct and implement better hiring initiatives for disabled workers.

The author provides firsthand knowledge in *Disability Friendly* about what it is like navigating the world and the workplace with a disability. He writes with gentle humor and humility about his experiences while educating his readers about the nature of disability, how disabled employees can make significant contributions to a company and give the company a better insight into their market.

Throughout Kemp’s discussion, he makes a compelling case that companies need to do more to hire and retain workers with disabilities. Since the passage of the Americans with Disabilities Act (ADA) in 1990, companies have only made a 1–2% increase in the hiring of workers with disabilities. This dismal statistic, along with other evidence presented by Kemp, shows that American companies have a long way to go before they can truly claim to be “inclusive” (pp. xxi–xxii).

Disability Friendly outlines concrete strategies for recruiting, hiring, and retaining employees with disabilities. Kemp’s suggestions are well supported by evidence and personal anecdotes and are often surprising. For example, he explains that most adaptations needed to support disabled workers do not cost the company anything at all, especially since remote work has become more typical since the COVID epidemic began. Other suggestions seem to be common sense, such as making sure that employees with physical disabilities are included in photos on company websites and on hiring materials.

The only area where I found Kemp’s discussion lacking was in discussing invisible disabilities, such as autism or attention-deficit/hyperactivity disorder (ADHD), that may require more than just physical workplace adaptations. As someone with one of these disabilities, I wondered how employers could become better educated about how to accommodate those of us who are neurodiverse.

Disability Friendly is primarily aimed at those who have the ability to shape and implement inclusive hiring practices, but it is also a must-read for anyone working or studying in the United States. Inclusive practices and adaptive technologies benefit all of us, whether we have a disability or not. Further, most disabilities are acquired rather than present at birth, meaning that anyone could one day be counted among the disabled. We cannot afford to think of disability as something that only affects others.

Nicole St. Germaine
Nicole St. Germaine is a Professor of English and the Coordinator of the Technical and Business Writing Program at the Natalie Z. Ryan Department of English at Angelo State University.

Drawing Product Ideas: Fast and Easy UX Drawing for Anyone

Kent Eisenhuth. 2023. John Wiley & Sons, Inc. [ISBN 978-1-119-83585-1. 192 pages, including index. US$30.00 (softcover).]

Drawing Product Ideas: Fast and Easy UX Drawing for Anyone teaches basic drawing skills to illustrate new concepts. The book is aimed at user experience (UX) designers, but the techniques are useful for anyone who needs to visually convey information.

Kent Eisenhuth has an impressive background in design leadership at Google; he pulls from these experiences to provide a solid range of user interface examples. Ten brief chapters contain hundreds of line drawings broken down into basic shapes and techniques. He assumes no previous knowledge of drawing, so even a beginner can execute these elements.

First, Eisenhuth makes a case for drawing as a design tool. Drawing, he argues, is the perfect medium for comprehension, collaboration, and iteration (pp. 5–7). Humans process information more easily in a visual format, which allows you to clearly convey your concept to your team. This leads, in turn, to meaningful collaboration during which the design can be refined. Finally, drawing is low stakes in time and resources: as you collaborate, you can iterate versions to integrate feedback quickly without the need for digital prototypes.

Next, Eisenhuth introduces the most common drawing types: diagrams for outlining site maps, processes, or systems; mind maps for organizing ideas; and digital interfaces and components. Even non-designers can use drawings to illustrate processes or information within their organization.

Chapters three and four cover the most essential elements of drawing: lines, points, and rectangles. Numerous illustrations give tips on breaking down depict interfaces and diagrams into their core shapes. Eisenhuth breaks down how simple shapes can be combined in new ways to create app interfaces, forms, and charts. Chapter five introduces circles, triangles, and more advanced shapes such as map pins and pointer hand cursors. He breaks advanced shapes down into manageable steps that anyone can follow.

After covering basic drawing, Eisenhuth demonstrates how to combine techniques to tell stories through your drawings. Showing user interaction and transitions between screens “help[s] strengthen people’s mental model” making them more sure of how it works (p. 145). Providing clear labels sparingly when needed can also improve comprehension. Using specific techniques to imbue your drawings with positive emotion can make people more receptive to your ideas; for example, when illustrating a chart, have the values climb upward from left to right to “invoke a feeling of positivity” (p. 167).

Drawing Product Ideas is a practical, useful introduction to basic drawing techniques for bringing new ideas to life. Overall, Eisenhuth makes a good case for drawing as a design tool. Simple instructions and examples make this book easy to follow. I recommend this for product designers and collaborators, but anyone who needs to construct visual aids within their organization will find these skills useful for brainstorming and process mapping.

Bonnie Winstel
Bonnie Winstel is the Assistant Manager of Software Development for Book Systems, Inc. in Huntsville, Alabama. She received her master’s degree in English and Technical Communication at the University of Alabama-Huntsville in 2013.

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Sean C. Herring, Editor

The following articles on technical communication have appeared recently in other journals. The abstracts are prepared by volunteer journal monitors. If you would like to contribute, contact Sean Herring at SeanHerring@MissouriState.edu.

"Recent & Relevant" does not supply copies of cited articles. However, most publishers supply reprints, tear sheets, or copies at nominal cost. Lists of publishers' addresses, covering nearly all the articles we have cited, appear in *Ulrich's international periodicals directory*.

Audience analysis

Framing COVID-19 preprint research as uncertain: A mixed-method study of public reactions

Ratcliff, C.L., Fleerackers, A., Wicke, R., Harvill, B., King, A.J., & Jensen, J.D. (2023). *Health Communication.* Advanced online publication. https://doi.org/10.1080/10410236.2023.2164954

"During the COVID-19 pandemic, journalists were encouraged to convey uncertainty surrounding preliminary scientific evidence, including mentioning when research is unpublished or unverified by peer review. To understand how public audiences interpret this information, [authors] conducted a mixed method study with U.S. adults. Participants read a news article about preprint COVID-19 vaccine research in early April 2021, just as the vaccine was becoming widely available to the U.S. public. [Authors] modified the article to test two ways of conveying uncertainty (hedging of scientific claims and mention of preprint status) in a 2 × 2 between-participants factorial design. To complement this, [authors] collected open-ended data to assess participants' understanding of the concept of a scientific preprint. In all, participants who read hedged (vs. unhedged) versions of the article reported less favorable vaccine attitudes and intentions and found the scientists and news reporting less trustworthy. These effects were moderated by participants' epistemic beliefs and their preference for information about scientific uncertainty. However, there was no impact of describing the study as a preprint, and participants' qualitative responses indicated a limited understanding of the concept. [Authors] discuss implications of these findings for communicating initial scientific evidence to the public and outline important next steps for research and theory-building."

Walter Orr

How the interplay of consumer-brand identification and crises influences the effectiveness of corporate response strategies

Ma, L. (2023). *International Journal of Business Communication*, 60, 84–104. https://doi.org/10.1177/2329488419898222

"Consumer-brand identification (CBI) establishes when consumers use the defining attributes of a brand to define themselves. This study examines whether and how CBI influences the effectiveness of corporate response strategies suggested by the situational crisis communication theory in preventable crises and whether this influence is moderated by a threat to the self-defining attributes shared between consumers and a brand. A total of 868 consumers of two brands took part in an online experiment. CBI increases the effectiveness of corporate response strategies at mitigating negative consumer reactions. Response strategies are even more effective when a crisis does not threaten the shared defining attributes. Additionally, compensation is the strategy that really reduces consumers' negative reactions, instead of apology strategy. More theoretical and practical implications were discussed."

Katherine Wertz

Collaboration

Surveying the effects of remote communication & collaboration practices on game developers amid a pandemic

Caravella, E., Shivener, R., & Narayanamoorthy, N. (2022). *Communication Design Quarterly, 10*(4), 5–15. https://doi.org/10.1145/3531210.3531211

"Communication and collaboration are essential parts of the game development process. However, during the global pandemic, the shift to remote work marked a sudden change in how developers could communicate and collaborate with one another, as usual ad hoc conversations that happen in physical offices were nonexistent. Based on a partnership grant study with the International Game Developers Association (IGDA), this piece focuses on the results of a survey that examined developers' mental health and productivity during the COVID-19 pandemic. [The authors'] findings suggest that most game developers want a hybrid or fully remote position even after pandemic conditions subside. Failure to address the pandemic's impact on the game development industry risks ignoring a rich area of technical communication complicated by, and responsive to, hybrid workplaces."

Lyn Gattis

Communication

Chatbots in marketing: A literature review using morphological and co-occurrence analyses

Ramesh, A., & Chawla, V. (2022). *Journal of Interactive Marketing*, 57(3), 472-496. https://doi.org/10.1177/10949968221095549

"Chatbots have become common in marketing-related applications, providing 24/7 service, engaging customers in humanlike conversation, and reducing employee workload in handling customer calls. However, the academic literature on the use of chatbots in marketing remains sparse and scattered across disciplines. The present study combines morphological analysis and co-occurrence analysis to bring structure to this area and to identify relevant research gaps. Morphological analysis divides a problem into pertinent and clearly distinguishable components, namely dimensions (at an abstract level) and variants (at a concrete level). A Zwicky box (a cross-variant matrix of dimensions) is then constructed to identify future research opportunities. Here, the authors obtain 11 dimensions and 264 variants. To eliminate inconsistent configurations (i.e., combinations of variants across dimensions), they perform a cross-consistency assessment and identify potential research gaps. To increase objectivity in the selection of relevant gaps, the authors use VOSviewer software to conduct a co-occurrence analysis of the variants."

Yvonne Wade Sanchez

Commentary—a Dimon in the rough: Apologetic crisis management at JPMorgan Chase

Hearit, K. M., & Hearit, L. B. (2023). *International Journal of Business Communication*, 60, 351–362. https://doi.org/10.1177/2329488420932303

"When companies are caught in a crisis, the need to deliver a defense in order to salvage their damaged reputation is an ongoing challenge. Drawing from actional legitimacy and apologia theory, this article examines corporate use of crisis communication through a case study surrounding Jamie Dimon, CEO at JPMorgan Chase. Dimon found himself in a crisis from 2012 to 2013 when a so-called 'London Whale' made a series of trades that cost the company $6 billion U. S. Dollars, and raised serious questions over Dimon's judgment and ability to lead JPMorgan Chase. In particular, [the authors] argue that the restoration of actional legitimacy centers around strategies of mortification, (corrective) action, justification, and authorization."

Katherine Wertz

Knowledge brokering in an era of communication visibility

van Zoonen, W., & Sivunen, A. (2023). *International Journal of Business Communication*, 60, 313–330. https://doi.org/10.1177/2329488420937348

"This study presents an analysis of the extent to which enterprise social media (ESM) use enhances visibility of content (message transparency) and connections (network translucence) in organizations, and how this affects knowledge brokering. The findings support the theory of communication visibility by demonstrating that ESM use is associated with perceptions of message transparency and network translucence. Furthermore, the findings suggest that employees, regardless of their position within a network, are provided with a vision advantage and thus have the ability to engage in knowledge brokering. Future work needs to examine the impact of network characteristics on these effects. This article contributes to our understanding of knowledge brokering in contemporary networked and mediated workplaces. Specifically, this article offers an analysis of the theory of communication visibility and demonstrates the mediating role of communication visibility in the relationship between ESM use and intraorganizational knowledge brokering activities."

Katherine Wertz

Design

Blame the bot: anthropomorphism and anger in customer–chatbot interactions

Crolic, C., Thomaz, F., Hadi, R., & Stephen, A. T. (2022). *Journal of Marketing*, 86(1), 132-148. https://doi.org/10.1177/00222429211045687

"Chatbots have become common in digital customer service contexts across many industries. While many companies choose to humanize their customer service chatbots (e.g., giving them names and avatars), little is known about how anthropomorphism influences customer responses to chatbots in service settings. Across five studies, including an analysis of a large real-world data set from an international telecommunications company and four experiments, the authors find that when customers enter a chatbot-led service interaction in an angry emotional state, chatbot anthropomorphism has a negative effect on customer satisfaction, overall firm evaluation, and subsequent purchase intentions. However, this is not the case for customers in nonangry emotional states. The authors uncover the underlying mechanism driving this negative effect (expectancy violations caused by inflated pre-encounter expectations of chatbot efficacy) and offer practical implications for managers. These findings suggest that it is important to both carefully design chatbots and consider the emotional context in which they are used, particularly in customer service interactions that involve resolving problems or handling complaints."

Yvonne Wade Sanchez

Conceptualizing and validating organizational communication patterns and their associations with employee outcomes

Mikkelson, A. C., & Hesse, C. (2023). *International Journal of Business Communication*, 60, 287–312. https://doi.org/10.1177/2329488420932299

"Using Ritchie and Fitzpatrick's conceptualization of family communication patterns, [the authors] developed a scale of communication patterns within an organizational context. Three studies (total $N = 877$) were conducted to develop the new measurement and demonstrate its psychometric properties. The item generation (Study 1) and the exploratory factor analysis (Study 2) revealed that conformity had both positive and negative dimensions. The confirmatory factor analysis (Study 3) demonstrated the strength of the factor structure for the two dimensions of conformity and the conversation orientation. Results indicated that positive conformity and conversation orientations were positively related to constructive employee outcomes (e.g., organizational commitment and employee engagement) and negatively related to detrimental employee outcomes (e.g., turnover intentions and burnout). The negative conformity orientation demonstrated the opposite relationship to employee outcomes. Finally, regression analyses indicated that interaction effects occurred between the conformity dimensions and the conversation orientation for several employee outcomes."

Katherine Wertz

"It makes everything just another story": A mixed methods study of medical storytelling on GoFundMe

Campeau, K. and Thao, Y. (2023). *Technical Communication Quarterly,* 32, 33-49 https://doi.org/10.1080/10572252.2022.2047792

"This article reports on a study of 65 randomly sampled medical crowdfunding campaigns and five interviews with campaign authors. We found that authors innovated technical and professional communication (TPC) tools to narrate their illness experiences, coordinate digital audiences, and compel action. Thus, these authors practice TPC as care seeking and caregiving. Crowdfunding platforms, however, situate authors to individualize structural problems in ways that preempt collective action. We conclude with pedagogical implications of our findings."

Rhonda Stanton

Diversity

Uncovering the role of strategic orientation in translating communication strategies to organizational performance: An analysis of practitioners from two Chinese societies

Wang, X., & Huang, Y.-H. C. (2023). *International Journal of Business Communication*, 60, 234–259. https://doi.org/10.1177/2329488420924839

"Integrating strategic process theory and resource orchestration view, this study challenges and extends the prior model supporting the direct effect of communication on organizational performance by examining the mediating role of practitioners' strategic orientation. Employing two data sets of communication practitioners in China and Hong Kong, results of the structural equation model show that reputation orientation and organization-public relationship orientation represent two strategic value systems fully mediating the relationship between communication strategies and the organizational goal attainment. The findings support the proposition that business outcomes and competitive advantages at the organizational level depends not simply on various communication strategies formulated by senior executives and top communication managers, but more importantly, on how frontline communication professionals implement these strategies and translate resources into strategic communication processes. Moreover, the contextual sensitivity of findings indicates a relational shift underway in the strategic communication paradigm, but organization-public relationship is still far from a dominant cultural mechanism thoroughly endorsed by the industry."

Katherine Wertz

Education

Analyzing safety communication in industrial contexts visualizing a drug abuse epidemic: Media coverage, opioids, and the racialized construction of public health frameworks

Welhausen, C. A.: (2023). *Journal of Technical Writing and Communication*, 53(2), 251-290. https://doi.org/10.1177/0047281622112518

"In technical and professional communication, the social justice turn calls on us to interrogate sites of positionality, privilege, and power to help foreground strategies that can empower marginalized groups. [The author] propose[s] that mainstream media coverage of the opioid epidemic represents such a site because addiction to these drugs, which initially primarily affected White people, has been positioned as a public health issue rather than a criminal justice problem. [The author] explore[s] the strategies that were used to create this positioning by investigating themes in the visual rhetoric as conveyed through data visualizations and in the text of the articles in which these graphics were published. [The author's] results align with two previous studies that confirmed this public health framing. [The author] also observed an emphasis on mortality, which contributes to our understanding of rhetorical strategies that can be used to engender support rather than condemnation for those suffering from drug addiction."

Anita Ford

Ethical issues

Ethical design approaches for workplace augmented reality

Greene, J. (2022). *Communication Design Quarterly, 10*(4), 16–26. https://doi.org/10.1145/3531210.3531212

"Augmented reality (AR) technologies are increasingly being implemented in various workplace contexts; however, they pose a number of ethical design challenges. To discern the ethical implications of workplace AR, this article conducts an analysis of the promotional discourses surrounding a workplace AR system. This analysis demonstrates a tendency to frame AR technologies in terms of a transhumanist evolution in worker agency and organizational efficiency. Such discourses elide applications of workplace AR for purposes of worker surveillance and exploitation. The article concludes by outlining speculative ethical design guidelines that communication designers can take up in their work on workplace AR systems."

Lyn Gattis

How human–chatbot interaction impairs charitable giving: the role of moral judgment

Zhou, Y., Fei, Z., He, Y., & Yang, Z. (2022). *Journal of Business Ethics*, 178(3), 849-865. https://doi.org/10.1007/s10551-022-05045-w

"Interactions between human beings and chatbots are gradually becoming part of our everyday social lives. It is still unclear how human–chatbot interactions (HCIs), compared to human–human interactions (HHIs), influence individual morality. Building on the dual-process theory of moral judgment, a secondary data analysis (Study 1), and two scenario-based experiments (Studies 2 and 3) provide sufficient evidence that HCIs (vs. HHIs) support utilitarian judgments (vs. deontological judgments), which reduce participants' donation amount. Study 3 further demonstrates that the negative effects of HCIs can be attenuated by inducing a social-oriented (vs. task-oriented) communication style in chatbots' verbal language designs. These findings highlight the negative impacts of HCIs on relationships among human beings and suggest a practical intervention for nonprofit organization managers."

Yvonne Wade Sanchez

Health communication

Examining perceptions of uncertain language in potential E-cigarette warning labels: Results from 16 focus groups with adult tobacco users and youth

Safi, A.G., Kalaji, M., Avery, R., Niederdeppe, J., Mathios, A., Dorf, M., & Byrne, S. (2023). *Health Communication*. Advanced online publication. https://doi.org/10.1080/10410236.2023.2170092

"E-cigarette use among youth presents a public health risk. Yet, cigarette smokers who substantially reduce their smoking or switch completely from traditional combustible cigarettes could benefit. As science about e-cigarettes is continually emerging, any potential warnings are likely to contain uncertain language. Hedged verbiage may impact decision making. To assess reactions, [authors] conducted 16 online focus groups; 8 with youth (n = 32, grouped by gender and by vaping experience) and 8 with adult tobacco users (n = 37, grouped by smokers, dual users of e-cigarettes and cigarettes, and former smokers who switched to e-cigarettes). Each focus group viewed and discussed 8 potential warnings messages. [Authors] conducted an inductive thematic analysis of the reactions to warning messages that contain uncertain language. Respondents' reactions were often negative, but varied based on specific usages of uncertainty, existing beliefs about uncertainty in law and science, and smoking/vaping use patterns that supported the use of uncertainty related to e-cigarettes. Many youth (and some adults) believed that uncertain language enabled audiences to minimize the likelihood of harm or interpreted it as meaning there are both healthy and unhealthy e-cigarettes. This qualitative study provides evidence that the use of types of uncertain language, the frequency of that use, and/or the selection of particular words in warnings, might not achieve the intended public health aims of increasing understanding of risk, deterring youth uptake, and/or facilitating a substantial switch from cigarettes. The use of certain types of uncertain language appears to have significant potential to bring unintended consequences. Suggestions for research and policy are included."

Walter Orr

Information management

Snippets, subject lines, and exclamation points: A case study in constructing better library emails

Davis, R. C. & Partlow, M. & Pearce, D. & Sheffield, S., (2022). *Weave*, 5 (2), https://doi.org/10.3998/weaveux.1634

"While this study was done for a library's automated emails, its lessons pertain to most institutions and companies. "Automated emails sent from the integrated library system (ILS) account for hundreds (or thousands) of patron contacts each day, but the email templates typically focus on communicating … policy rather than on answering patron questions and concerns… . To address the issues with our emails, a small interdepartmental team rewrote all our ILS' notification templates… . Using our Libraries' style guide, as well as multiple rounds of user research, we refined formatting, added information users told us would be useful, and made sure the tone of each email was appropriate to its content." … . The article includes a review of past literature on automated emails with a "content strategy" and tone that focused on users' needs, the primary research the authors performed to create a better user experience, and before and after samples of automated emails based on their work. Since automated emails are a cost-effective way to reach patrons and customers, reviewing the automated email system regularly to best meet patron/customer needs can create a better user experience."

Diana Fox Bentele

Instructions

Minimalism for the win: User-centered design for guidance in industrial maintenance

Heinonen, H., Virtaluoto, J., Suomivuori, T., Forsman, K., Kangas, T., & Siltanen, S. (2022). *IEEE Transactions on Professional Communication, 65*(4), 485–501. https://doi.org/10.1109/TPC.2022.3205468

This article reports findings of "an exploratory study to test the delivery of technical instructions built on the principles of minimalism." The researchers' objective was to investigate how "the semantic structure of DITA XML [could] be utilized in delivering technical information to users based on their skill levels" and how "a layered system of information [would] support the principles of minimalism." The researchers "created material and tested the concept in user studies with maintenance personnel in three countries," collecting responses "through participant observation, interviews, and questionnaires." The researchers concluded "the context-sensitive level of expertise concept empowers users to decide on the depth of technical information that they require to complete the task at hand. The semantic structure of DITA XML works well in the delivery of technical information to the users based on their skill levels. Many of the key principles of minimalism are applicable to hardware maintenance instructions."

Lyn Gattis

Intercultural communication

English as a lingua franca in mainland China: An analysis of intercultural business communicative competence

Yao, Y., & Du-Babcock, B. (2023). *International Journal of Business Communication*, 60, 3–23. https://doi.org/10.1177/2329488419898221

"China's rapid expanding its collaboration with the rest of the world entails an urgent need of numerous talents with excellent intercultural communicative competence. Past research has shown that limited empirical studies are available on intercultural communicative competence in business contexts of Mainland China. To bridge the gap, the present study aims to explore what competencies are obligatory for successful intercultural business communication by examining the perceptions of Chinese business professionals on this issue. Adopting the triangulated research method, the present study employs both quantitative and qualitative data to ascertain a better understanding of the issues in question and to corroborate the results obtained from these two research methods. Two hundred and twenty-seven (N = 227) Chinese business professionals filled in the online questionnaires and 11 of them participated in

follow-up interviews. [The authors'] findings indicate that intercultural business communicative competence (IBCC) consists of four obligatory components: three in relation to cultural ability (metacognitive intelligence, motivational intelligence, and behavioral intelligence) and one to language ability (strategic competence). Based on [the authors'] findings, [the authors] present a model of IBCC with implications to theory, practice, and education for intercultural business communication."

Katherine Wertz

Leadership

Making the most effective strategy more effective: Examining the situational and interaction effects of accommodative CCSs in corporate crises

Wu, F., & Xu, D. (2023). *International Journal of Business Communication*, 60, 260–286. https://doi.org/10.1177/2329488420929748

"This study introduces the organization justice theory as a framework to conceptualize accommodative crisis communication strategies (CCSs). In this regard, it is proposed that three sub-strategies of accommodative CCSs—apology, showing regard, compensation, and corrective action—can enable organizations transform the negative responses of publics by restoring procedural, interactional, and distributive justice. Using an online experiment ($N = 800$), this study investigates the effectiveness of each substrategy in different conditions of cause attribution and examines how combinations of accommodative CCSs affect postcrisis public responses. The results indicate that substantive accommodative CCSs (compensation and corrective action) are more effective than symbolic ones (apology and showing regard) in restoring the perceptions and behavioral intentions of publics regarding the organization. Specifically, substantive accommodative CCSs perform better at restoring reputation and purchase intentions when the cause of a crisis is externally attributed. Furthermore, employing a single symbolic accommodative CCS is found to result in greater account acceptance than using a combination."

Katherine Wertz

Reflections on working as a medical writer with a disability and how medical writers can be disability allies

Towles, J.M. (2022). *American Medical Writers Association Journal*, 37(4), 29-34. [doi: none]

"[The author is] a firm believer that things happen for a reason, but also that good comes from talking about how things came to be the way they are. The first part of this article describes [the author's] personal journey navigating the complexities of having a disability concurrently with those of being a medical writer and from that standpoint can be considered subjective compared with the data-driven information we are used to seeing in our daily work. It is not meant to be a history on disability law or a comprehensive treatise on why people with disabilities are underemployed—other authors have covered those topics in great detail in other milieus, to incremental avail—but, rather, to raise awareness of potential challenges within the medical writing context and how navigating stakeholders' assumptions about health circumstances can be as arduous as managing the health condition itself. The second part of this article provides practical suggestions on things the medical writing community can do to make sure their own can keep being strong contributors no matter what their circumstances are in life. It is the author's hope that this article will represent the start of a dialogue within [the medical writing] community and that by sharing one story others feel comfortable sharing their own."

Walter Orr

Political discourse

Diagnosing unsettled stasis in transnational communication design: An exploration of public health emergency communication

Gerdes, J. (2023). *Technical Communication Quarterly,* 32, 17-32, https://doi.org/10.1080/10572252.2022.2069286

"This article builds four composite characters from the international Zika response to demonstrate each role's position relative to inclusive health communication. I argue that a lack of jurisdictional

stasis is at play in decision-making practices about transnational risk communication approaches. During emergency health responses, this lack of jurisdictional stasis functions to maintain the status quo in order for stakeholders to leverage their power in prioritizing local deliberations in transnational public health discourse and decision making."

Rhonda Stanton

Public relations

Benefit communication and its effects on employees' benefit level satisfaction: The multiple mediating effects of POS and benefit comparison

Cordón-Pozo, E., Vidal-Salazar, M. D., de la Torre-Ruiz, J. M., & Gómez-Haro, S. (2023). *International Journal of Business Communication*, 60, 331–350. https://doi.org/10.1177/2329488420943667

"Many firms offer employees a broad range of benefits as part of their compensation. However, little attention has been given to the extent to which firms communicate with their employees in relation to such benefits. This study proposes that benefit communication can have both direct and indirect positive effects on employees' benefit level satisfaction. The effects of benefit communication were examined by means of a survey among 828 employees of different Spanish firms. This study hypothesized and found that benefit communication led to increased benefit level satisfaction. Similarly, this study found that benefit communication can influence benefit level satisfaction through the multiple intermediating effects of employees' perceived organizational support and employees' comparison of their benefits with those of referent others. These results imply that academics and practitioners must pay attention to providing adequate benefit communication in order to ensure the effectiveness of benefits."

Katherine Wertz

Research

Embodied participation: (Re)situating bodies in collaborative research

Clay, M., Smith-Mayo, J., & McGreavy, B. (2022). *Communication Design Quarterly, 10*(4), 27–39. https://doi.org/10.1145/3531210.3531213

"[This] paper centers embodiment as a theme and a process in research through describing the fine-grained practices and everyday interactions that shape collaborative research in the contexts of watershed restoration and environmental monitoring. [The authors] focus on embodiment because it offers a means for attending to the process and politics of knowledge production within and across boundaries. [They] offer two case studies that focus on embodiment to structure research processes and shape ongoing, emergent, and collaborative research practices. [They] argue technical communication as a field is well positioned to include embodied practices in research design and writing."

Lyn Gattis

Rhetoric

Building better machine learning models for rhetorical analyses: The use of rhetorical feature sets for training artificial neural network models

Majdik, Z. & Wynn, J. (2023). *Technical Communication Quarterly,* 32, 63-78, https://doi.org/10.1080/10572252.2022.2077452

"In this paper, we investigate two approaches to building artificial neural network models to compare their effectiveness for accurately classifying rhetorical structures across multiple (non-binary) classes in small textual datasets. We find that the most accurate type of model can be designed by using a custom rhetorical feature list coupled with general-language word vector representations, which outperforms models with more computing-intensive architectures."

Rhonda Stanton

Scientific writing

First, do no harm: Ethical considerations surrounding the environmental impact of our digital content

Bonsignore, A. (2022). *American Medical Writers Association Journal,* 37(4), 40-43. [doi: none]

"There is a direct correlation between digital content and greenhouse gas emissions. We have an ethical obligation to mitigate our climate impacts when we can to prevent harm." This article describes the climate footprint of common aspects of medical writing work. The carbon cost of data is discussed, including that of websites, audio and video content, and virtual meeting tools.

Walter Orr

Genre and metagenre in biomedical research writing

Wickman, C. (2023). *Journal of Business and Technical Communication*, 37(2), 140-173. https://doi.org/10.1177/10506519221143113

"The use of reporting guidelines is an established yet still-evolving practice in the field of biomedicine. These documents are often linked to common methodologies (e.g., randomized clinical trials); they include multiple textual artifacts (e.g., checklists, flow diagrams) and have a history that is coextensive with the emergence and ongoing development of evidence-based medicine (e.g., as an epistemological orientation to research and decision making). Drawing on the concept of metagenre, this article examines how practitioners use reporting guidelines to define and regulate the boundaries of biomedical research and writing activity. The analysis, focusing on one prominent set of guidelines, shows how practitioners use the genre–metagenre dynamic to promote strategic intervention while upholding traditional principles and standards for evidence-based research and communication."

Sean C. Herring

Teaching

Effects of incorporating an expert decision-making mechanism into chatbots on students' achievement, enjoyment, and anxiety

Hsu, T. C., Huang, H. L., Hwang, G. J., & Chen, M. S. (2023). *Educational Technology & Society*, 26(1), 218-231. https://doi.org/10.30191/ETS.202301_26(1).0016

"In traditional instruction, teachers generally deliver the content of textbooks to students via lectures, making teaching activities lack vibrancy. Moreover, in such a one-to-many teaching mode, the teacher is usually unable to check on individual students' learning status or to provide immediate feedback to resolve their learning problems. Chatbots provide an opportunity to address this problem. However, conventional chatbots generally serve as information providers (i.e., providing relevant information by matching keywords in a conversation) rather than as decision-making advisors (i.e., using a knowledge-base with a decision-making mechanism to help users solve problems). Thus, this study proposes an expert decision-making-based chatbot to facilitate individual students' construction of knowledge during the learning process. A quasi-experiment was conducted to compare the differences in the performances and perceptions of students using the expert decision making-based chatbot (EDM-chatbot) and the conventional chatbot (C-chatbot) in the activities of a geography course. One class of 35 students was the experimental group, using the EDM-chatbot. The other class of 35 students was the control group, using the C-chatbot. The results of the study showed that the EDM-chatbot combined with expert decision-making knowledge significantly improved students' learning achievement and learning enjoyment as well as reducing their learning anxiety, showing the value of the proposed approach."

Yvonne Wade Sanchez

Regulating emotions for social action: Emotional Intelligence's role in TPC

Fuglsby, B., & Verramoothoo, S. (C.) (2023). *Technical Communication Quarterly,* 32, 98-113, https://doi.org/10.1080/10572252.2022.2079725

"This article describes students' emotional intelligence (EI) development when participating in the Trans-Atlantic and Pacific Project (TAPP) in two technical and professional communication (TPC) courses. The researchers used modified grounded theory to compile the emotions used for coding students' weekly reflections, and content analyzed how the TAPP experience affected students' EI development. Overall, the article emphasizes the importance of supporting TPC students' EI development in low-stakes environments since EI directly impacted their actions when collaborating."

Rhonda Stanton

Technology

Hey Google, help doing my homework: Surveying voice interactive systems

Demir, F., Kim, D., & Jung, E. (2022). *Journal of User Experience, 18*(1), 41–61. [doi: none]

"Voice assistant devices, such as Google Home™ and Amazon Echo™, are at the forefront of natural voice interaction and natural language search through the removal of any graphical user interface (GUI). This user experience study is one of the first to compare information foraging using Google Home versus search behaviors using a traditional computer or desktop in a learning environment. [The authors] conducted research (N = 20) to investigate information foraging and retrieval behaviors of participants and measure query effectiveness, efficiency, and user satisfaction. Participants were separated into two distinct groups. The experimental group used the Google Home smart speaker to retrieve information for predefined question sets in the following categories: research, trivia, and math. The control group sought to answer the same question set using more traditional technologies including computers, tablets, cell phones, and calculators. The results show that participants with voice assistants found the correct answers almost two times faster for research and trivia questions and three times faster for math questions than participants using traditional technologies. User satisfaction also scores much higher with voice assistants than with traditional systems. Yet, despite these results, [the researchers] found that privacy concerns, limited searchable databases, and voice-recognition challenges are all limiting factors to the adoption and widespread use of voice assistants. To reach the full promise of relative efficiency and user satisfaction favoring voice assistants over traditional systems, these weaknesses must be addressed."

Lyn Gattis

Evaluating communication effectiveness through eye tracking: Benefits, state of the art, and unresolved questions

Casado-Aranda, L.-A., Sánchez-Fernández, J., & Ibáñez-Zapata, J.-Á. (2023). *International Journal of Business Communication*, 60, 24–61. https://doi.org/10.1177/2329488419893746

"Modern eye-tracking techniques have opened a new door of opportunities for evaluating communication effectiveness in a way that minimizes cognitive biases and provides moment-by-moment insights into communication's attention processes. The increasing body of research applying eye-tracking methodologies, together with the reorientation of the landscape of communication, calls for a comprehensive overview of the scope of research concerning audience's visual attention to advertising. This is the first study that applies a systematic literature review approach to face this research gap by analyzing 112 papers published between 1979 and 2019 in journals indexed by the *ISI Web of Science* database. Based on this review, the article examines current evidence determining the visual attention to ads and the relationship between eye-tracking measures and other facets of advertising effectiveness, namely cognitive, affective, and behavioral consumer response. Finally, this article discusses the implications for business communication and proposes directions for academics and professionals intending to explore advertising effectiveness through eye tracking."

Katherine Wertz

Usability studies

Heuristic evaluation versus guideline reviews: A tale of comparing two domain usability expert's evaluation methods

Nizamani, S., Nizamani, S., Basir, N., Laghari, G., Khoumbati, K., & Nizamani, S. (2022). *IEEE Transactions on Professional Communication, 65*(4), 516–529. https://doi.org/10.1109/TPC.2022.3201732

"The usability of university websites … can be evaluated either by testing methods that rely on actual users or by inspection methods that rely on experts for evaluation. Heuristic evaluation and guideline reviews are two inspection methods of usability evaluation. A heuristic evaluation consists of a few general heuristics (rules), which are limited to checking general flaws in the design. A guideline review uses a much larger set of guidelines/suggestions that fit a specific business domain." This study compared guideline reviews and heuristic evaluation "in a domain- and the culture-specific context in terms of the nature, time required, approach, templates, and results… . The results reflect that both methods identify similar usability issues; however, they differ in terms of the nature, time duration, evaluation procedure, templates, and results of the evaluation."

Lyn Gattis

Technical Communication as assemblage

Johnson-Eilola, J. & Selber, S. (2023). *Technical Communication Quarterly,* 32, 79-97, https://doi.org/10.1080/10572252.2022.2036815

"This article offers a theoretical intervention into the work on posthumanism in technical and professional communication (TPC), an intervention that encourages the field to recognize relationships between objects and users in different ways. Our intervention draws on the work of Deleuze and Guattari to reimagine how TPC tends to think about the concept of assemblage. We apply this other view in makerspaces, illustrating what it buys us for practice and theory in complex sociotechnical contexts."

Rhonda Stanton

User experience

"The era of ferment": How practitioners and educators frame HCI

Austin, A., Abdelnour, J., & Clemmensen, T. (2022). *Journal of User Experience, 18*(1), 7–40. [doi: none]

"This study examined various roles in HCI and incongruences between practitioners' and educators' perceptions and experiences. The incongruences are articulated through the conceptual lens of Technological Frames (TF), which are evidenced by shared understanding of theory, practice, and a common approach to practice. [The authors] conducted 21 interviews with HCI practitioners, educators, and people who both practice and teach. [They] adopted a template analysis approach with matrix queries to identify similarities and distinctions between the different TFs of these roles. [The] findings include incongruences between these roles in how they frame and elicit users' mental models, how they define HCI success, and their levels of enthusiasm for HCI. Congruence was found in framing communication skills, collaboration, and creativity. [The authors] contribute proposals for new requirements to frames and skills within HCI curricula that may help close the gap between education and practice. [They] conclude that despite some convergence across and within groups, perceptions of the HCI field are still unstable, resembling an 'era of ferment.'

Lyn Gattis

Writing

Required templates: An assemblage theory analysis of how template character limits influence the writing of DIY online grant proposals

Gallagher, J., Wysocka, A., & Holmes, S. (2023). *Technical Communication Quarterly,* 32, 50-62, https://doi.org/10.1080/10572252.2021.2019318

"Identifying the effects of online templates, such as empty state pages (ESPs), sheds light on the user writing habits and best practices for user design. By

using assemblage theory and extending previous studies of ESPs to grant proposal writing on the crowded-funded website Experiment.com, this large-scale study (n = 778) finds that required fields are more likely to be filled to the character limit than optional fields."

Rhonda Stanton

The 5 most commonly misused words in medical writing (According to an editor)

Herron, C.R. (2022). *American Medical Writers Association Journal,* 37(4), 44-45. [doi: none]

"Words are powerful. They may deceptively look like simple little strings of letters, but they hold the tremendous power of influence. The words we choose—and where we place them—influence thoughts, emotions, and behaviors. Clear words support clear thinking. And clear writing and clear thinking go hand in hand. Yet, some writers will throw words on the page, hoping that readers will "get the idea." But when you use words that are ambiguous, inaccurate, or imprecise, you encourage ambiguous, inaccurate, and imprecise thinking. This carelessness can cause death by a thousand cuts—each word misuse can chip away at the clarity and credibility of the work. This chipping away can involve any one of the hundreds of thousands of words in the English language. But as a professional editor, [the author has] noticed 5 words that are most commonly misused in medical writing: utilize, increase, level, while, and comprise."

Walter Orr